



# LODI GENERAL PLAN

**DRAFT**

CITY OF LODI AUGUST 2009





Lodi is a distinctive Central Valley community along the Mokelumne River, adjacent to the Sacramento Delta. It is a compact city surrounded by vineyards, with a revitalized downtown and attractive neighborhoods. Lodi is also a burgeoning center of wine production and tourism, with the local appellation increasingly gaining in prestige, especially for its zinfandels. Because of its charm and small-town atmosphere, Lodi remains the preferred residential choice for many residents of the greater San Joaquin County region, and an increasing draw for employers.

This General Plan outlines a vision for Lodi's future, building on the city's assets, including its historic downtown, parks, arts and culture, and sense of community. With the wine industry increasingly vital to the city's economic sustenance and character, the General Plan promotes continued compact form and emphasizes preservation of surrounding agricultural and viticulture lands. Economic development, downtown vibrancy, revitalization of commercial corridors with a mix of uses, and creation of walkable neighborhoods are priorities, along with a commitment to a sustainable development pattern, ranging from overall city form to the design of buildings and open spaces.



Livable neighborhoods, with access to retail, public facilities, jobs, and parks, are priorities for both existing and future development areas.

## 1.1 PLANNING THEMES

The General Plan presents eleven central planning themes, which were highlighted during the visioning phase and developed through discussions with community members. These themes are woven throughout the Plan and specified through policy measures.

1. **Compact Urban Form.** The Plan enhances Lodi's compact urban form, promoting infill development downtown and along key corridors, while also outlining growth possibilities directly adjacent to the existing urban edge. The City's overall form will be squarish, reinforcing the centrality of downtown, with virtually all new development located within three miles from it.
2. **Mokelumne River as the City's Northern Edge.** The Lodi community has expressed a desire to see the river remain as the city's northern edge. The southern bank of the river (within the city) is occupied by residential uses and streets do not reach the river. Therefore, connectivity across the river to knit the urban fabric would be challenging if growth were to extend northward.
3. **Enhanced Mixed-Use Centers and Corridors.** The Plan designates downtown as a mixed-use center, with a mix of commercial and residential uses. Stretches of major commercial corridors are depicted with a mixed-use designation to enable continued investment in these areas and enhancement of vacant and underutilized parcels.
4. **Walkable, Livable Neighborhoods.** The Plan envisions new neighborhoods with a variety of uses, diversity of housing types, and short blocks, organized around mixed-use centers. This pattern provides retail, housing, offices, parks, and other uses.
5. **Street Connectivity and Urban Design.** The Plan provides community design strategies for improving street connectivity, particularly in terms of access to downtown, neighborhoods, jobs, and shopping.



6. **Preservation of Existing Neighborhoods.** Existing development in a vast majority of the Planning Area is proposed to remain as is, in terms of land use and density. Lodi residents are proud of their vibrant neighborhoods. They enjoy the small-town character of the city and would like to ensure that Lodi's high quality-of-life is enhanced as the city grows.
7. **Agricultural Preservation Along Southern Boundary.** In order to preserve agriculture and maintain a clear distinction between Lodi and Stockton, the Plan acknowledges the Armstrong Road Agricultural/Cluster Study Area along the south edge of Lodi, from Interstate 5 (I-5) to State Route (SR) 99, and south to Stockton's Planning Area boundary.
8. **Employment-Focused Development in the Southeast.** The area east of SR-99 toward the south is designated as a growth area for office, business park and commercial uses. This area has excellent regional access, and is adjacent to existing urbanized areas.
9. **Enhanced Bicycle and Pedestrian Connections.** Lodi already has an expansive bicycle network and good pedestrian facilities, including sidewalks, signals, landscaping and street furniture, particularly downtown. Improvements to pedestrian and bicycle pathways in new and existing neighborhoods are identified in the General Plan.
10. **Recreation Path along Irrigation Canal Right-of-Way.** The Woodbridge Irrigation District Canal runs through the city, passing through residential neighborhoods. A public recreation trail is envisioned to enable walking, jogging, and biking.
11. **Phasing Future Development.** The Plan identifies urban reserve areas along the west and east edges of the city to provide additional area for development, if needed. These urban reserve areas ensure that the city conforms to its Growth Management Ordinance and grows at a reasonable rate.



The Plan ensures that Lodi maintains its compact form, by preserving existing neighborhoods, enabling infill development, defining growth boundaries, and phasing development over time.

## 1.2 SCOPE AND PURPOSE

### General Plan Purpose

The General Plan governs all City actions relating to Lodi's physical development. The General Plan is mandated by and derives its authority from California Government Code Section 65300, which requires each city and county in California to adopt a General Plan, "for the physical development of the county or city, and any land outside its boundaries which... bears relation to its planning." The Lodi General Plan is a document adopted by the City Council that serves several purposes:

- To outline a vision for Lodi's long-term physical and economic development and community enhancement;
- To provide strategies and specific implementing actions that will allow this vision to be accomplished;
- To establish a basis for judging whether specific development proposals and public projects are in harmony with Plan policies and standards;
- To allow City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards; and
- To provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the Zoning Ordinance, the Capital Improvements Program and facilities plans.

State law requires that a variety of City actions be consistent with the General Plan so regular ongoing use of the Plan is essential. The Plan is both general and long-range; there will be circumstances and instances when detailed studies are necessary before Plan policies can be implemented.

### General Plan Requirements

A city's general plan has been described as its constitution for development—the framework within which decisions must be made on how to grow, provide public services and facilities, and protect and enhance the environment. California's tradition of allowing local authority control over land use decisions means that the state's cities have considerable flexibility in preparing their general plans. However, State planning laws do establish basic requirements about the issues that general plans must address. The California Government Code establishes both the content of general plans and rules for their adoption and subsequent amendment. Together, State law and judicial decisions establish three overall guidelines for general plans. They should be:

- **Comprehensive.** This requirement has two aspects. First, the General Plan must be geographically comprehensive. That is, it must apply throughout the entire incorporated area and should include other areas that the City determines are relevant to its planning. Second, the general plan must address the full range of issues that affects the City's physical development.
- **Internally Consistent.** This requirement means that the General Plan must fully integrate its separate parts and relate them to each other without conflict. "Horizontal" consistency applies as much to figures and diagrams as to the general plan text. It also applies to data and analysis as well as policies. All adopted portions of the general plan, whether required by State law or not, have equal legal weight. None may supersede another, so the General Plan must resolve conflicts among the provisions of each element.
- **Long-Range.** Because anticipated development will affect the city and the people who live or work there for years to come, State law requires every general plan to take a long-term perspective. The time horizon for this general plan is approximately 20 years.

## 1.3 PLAN PROCESS

The Plan draws its ideas from many citizens, community groups, business owners, elected officials, and City staff who participated in decision-making during the update process. The maps and policies in this Plan are based on the need to accommodate a future population and employment base and the desire to be an ideal place to live, work, and play. The Plan will be used on an ongoing basis, since many City regulations and actions are required by State law to be consistent with the General Plan.

### Public Participation

Public participation was an essential component to the development of the Lodi General Plan. The update process was initiated in fall 2006—Lodi’s centennial year—to replace the 1991 General Plan. Community members and stakeholders participated in the planning process through several different medium over the course of three years. They formulated a vision, determined future development patterns, and informed policy development, through the following participation opportunities:

- A mail-in survey sent to all residential addresses in the city;
- Public workshops and meetings;
- Stakeholder interviews and neighborhood meetings;
- Workshops with the City Council and Planning Commission;
- Presentations to organizations and neighborhood groups;
- Newsletters;
- Comments via e-mail; and
- A project website.



Community members shared ideas and offered feedback on General Plan issues and policies during workshops and meetings.



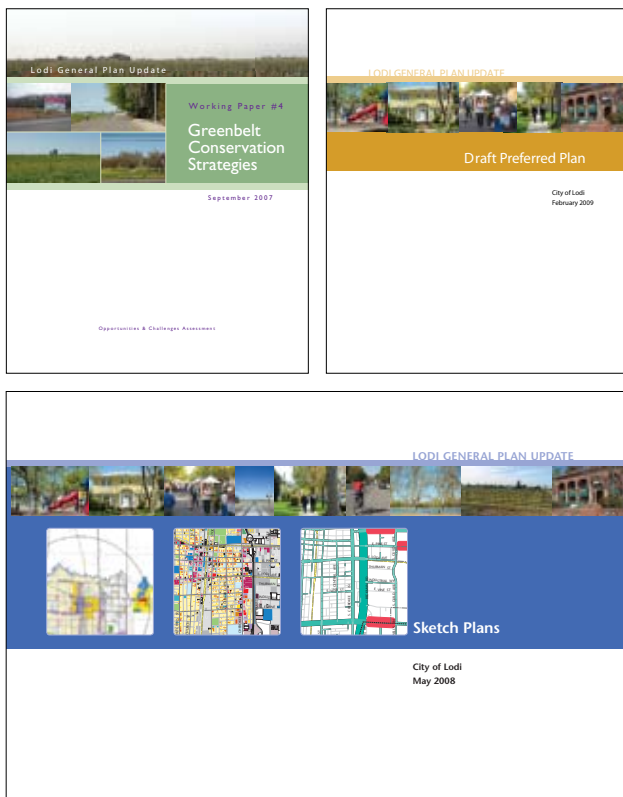
## Interim Documents

As part of the General Plan update process, four working papers documenting existing conditions, trends, planning issues, and implications were prepared:

- **Working Paper #1: Land Use, Transportation, Environment, and Infrastructure** provided a baseline of existing conditions in the city, focusing on its physical environment and built form.
- **Working Paper #2: Urban Design and Livability** outlined qualities of Lodi that contribute to its livability and which should be embodied in the future.
- **Working Paper #3: Growth and Economic Development Strategy** presented growth trends, likely demand for various land uses—including retail demand by sector—and opportunities, challenges, and possibilities for their arrangement in Lodi's future.
- **Working Paper #4: Greenbelt Conservation Strategies** focused on the issue of a greenbelt along the southern edge of the city, including its viability, size, location, and feasible implementation techniques and incentives.

Following these analyses, three land use alternatives for future development and their transportation, infrastructure, and fiscal impacts were prepared in a Sketch Plan Report. The sketch plans presented a range of options to guide future development and intensification in Lodi, addressed goals for conservation, economic development, and walkable livable neighborhoods, and analyzed relative impacts on traffic and infrastructure.

Finally, a preferred plan was selected based on the most desired portions of the sketch plans, following a community open house and meetings with citizen and business groups. The Preferred Plan was endorsed by the City's decision makers and became the starting point for the General Plan Land Use Diagram and associated policies.



Interim analyses and products informed the development of the General Plan.

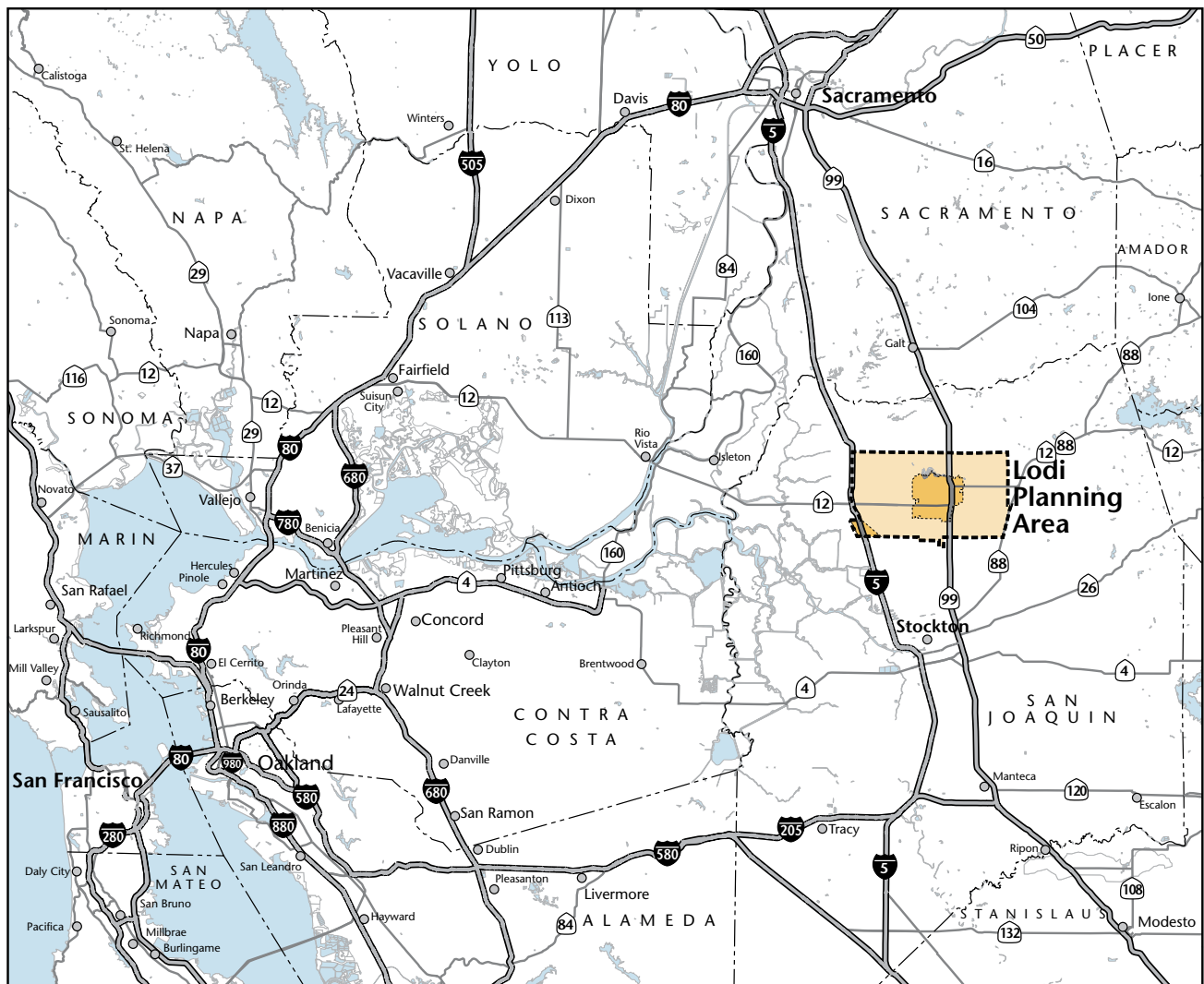


## 1.4 REGIONAL LOCATION AND PLANNING BOUNDARIES

### Regional Location

Located along the Mokelumne River, adjacent to the Sacramento River Delta, Lodi is situated in the San Joaquin Valley between Stockton, six miles to the south; Sacramento, 35 miles to the north; and along SR-99. The city is located on the main line of the Union Pacific Railroad and is within five miles of I-5 via SR-12. Figure 1-1 illustrates the city's regional location.

**FIGURE 1-1: REGIONAL LOCATION**



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## Planning Boundaries

The General Plan must cover Lodi's adopted Sphere of Influence (SOI), as well as any land outside these boundaries that is relevant to the city's planning. The Planning Area covers 79.4 square miles, or 50,827 acres. This land area is dominated by vineyards and agriculture. Development in the Planning Area is concentrated in the urbanized areas: within Lodi city limits and Woodbridge—a community contiguous to Lodi and within Lodi's SOI; and in Flag City, an unincorporated commercial center at the junction of I-5 and SR-12. Figure 1-2 shows this Planning Area.

Lodi's current (2008) SOI includes, in addition to Woodbridge, lands west and east of City limits where developments have been recently approved, as well as a small pocket in the northeast portion. Lodi's SOI covers 16.6 square miles, or 10,623 acres of land.

The city is largely flat, distinguished by Lodi Lake and the Mokelumne River that form the northern edge of the city. The White Slough Water Pollution Control Facility (White Slough) is located within City limits, but is separated from the urbanized area of Lodi. Lodi's incorporated limits (exclusive of White Slough) encompass an area of about 12 square miles.



A view toward the northwest corner of Lodi and the Town of Woodbridge shows Lodi Lake and the Mokelumne River—the city's northern boundary.

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## 1.5 PLAN ORGANIZATION

### General Plan Structure

State law mandates that general plans include seven elements: Land Use, Circulation, Open Space, Conservation, Noise and Safety, and Housing. Elements for other topics of local concern may also be included. This General Plan includes all mandated and two optional elements: Growth Management, and Community Design and Livability. Topics related to sustainability are woven throughout the Plan. For example energy efficiency is discussed in the Conservation Element and green building is discussed in the Community Design and Livability Element. The Housing Element is updated every five to seven years, per State requirements, and therefore is included as an appendix. An implementation program is also included as an appendix. Table 1-1 illustrates how the nine elements are arranged.

### Organization of the Elements

Each chapter of this General Plan includes brief background information to establish the context for the policies in the chapter. This background material is not a comprehensive statement of existing conditions nor does it contain any adopted information, unless noted otherwise, such as with land use classifications. (Readers interested in a comprehensive understanding

of issues related to a particular topic should refer to the working papers described in Section 1.3.) This background information is followed by guiding policies and implementing policies:

- Guiding policies are the City's statements of broad direction, philosophy, or standards to be achieved.
- Implementing policies are specific statements that guide decision making. They may refer to existing programs or development standards or call for establishment of new ones.

Together, these policies articulate a vision for Lodi that the General Plan seeks to achieve. They also provide protection for the city's resources by establishing planning requirements, programs, standards, and criteria for project review.

### Numbering System

Policies are organized using a two-part numbering system. The first part refers to the element and the second is the order in which the policies appear, with a letter designation to distinguish guiding policies (G) and implementing policies (P). For example, the first guiding policy in the Land Use Element is numbered LU-G1 and the first implementing policy is LU-P1. Thus, each policy in the Plan has a discrete number for easy reference.

**TABLE 1-1: CORRESPONDENCE BETWEEN REQUIRED GENERAL PLAN ELEMENTS AND THE LODI GENERAL PLAN**

STATE MANDATED/OPTIONAL ELEMENT	LOCATION IN THE LODI GENERAL PLAN
Land Use	Chapter 2: Land Use
Circulation	Chapter 5: Transportation
Open Space	Chapter 6: Parks, Recreation, and Open Space
Conservation	Chapter 7: Conservation
Safety	Chapter 8: Safety
Noise	Chapter 9: Noise
Housing	Chapter 10: Housing
Community Design and Livability (optional)	Chapter 4: Community Design and Livability
Growth Management and Infrastructure (optional)	Chapter 3: Growth Management and Infrastructure



## 1.6 ADMINISTRATION OF THE PLAN

The General Plan is intended to be a dynamic document. As such, it may be subject to amendments over time to address site-specific or comprehensive needs, to respond to changes in State or Federal law, or to modify policies that may become obsolete or unrealistic over time.

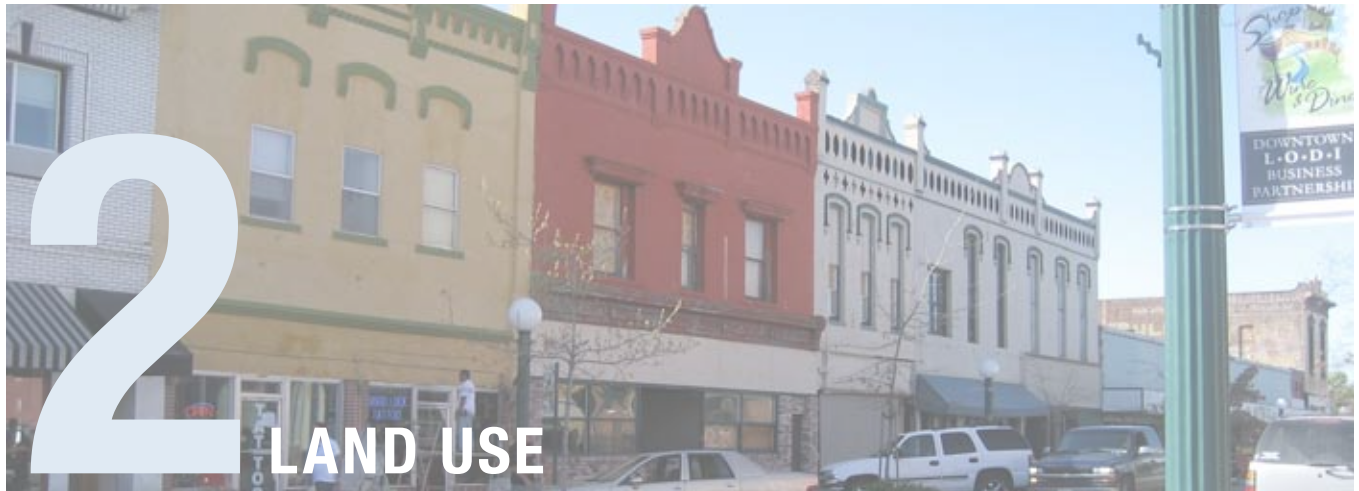
### Amendments to the General Plan

State law limits the number of times a jurisdiction can amend its general plan to no more than four times per year, although each amendment may include more than one change. However, this restriction does not apply to amendments that update optional elements (such as Growth Management or Community Design and Livability); allow for the development of affordable housing; or comply with a court decision.

### Annual Report

The California Government Code requires that City staff submit an annual report to the City Council on the status of the General Plan and progress in its implementation. This report is also submitted to the Governor's Office of Planning and Research and the Department of Housing and Community Development. It must include an analysis of the progress in meeting the City's share of regional housing needs and local efforts to remove governmental constraints to maintenance, improvement, and development of affordable housing. In addition, any mitigation monitoring and reporting requirements prescribed by the California Environmental Quality Act should be addressed in the annual report because they are closely tied to plan implementation. Finally, the report should include a summary of all general plan amendments adopted during the preceding year, a description of upcoming projects or general plan issues to be addressed in the coming year, and a work program and budget.

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How the city uses its land to meet the needs of both residents and business interests is central to the General Plan. This Plan seeks to accommodate anticipated population expansion, while maintaining the city's small-town identity and compact form, and providing for economic growth. The Land Use Element summarizes the city's existing land use pattern; establishes a General Plan land use classification system; describes development potential; and provides land use and economic development strategies.

To maintain flexibility in the face of changing and unpredictable market conditions, the General Plan accommodates a range of potential economic conditions, by identifying a phasing strategy for growth. While the details of this concept are discussed in Chapter 3: Growth Management and Infrastructure, a summary of this phased approach and the resulting development potential are reported in Section 2.3.

## 2.1 CURRENT LAND USE PATTERN

### Overview

Lodi's current land uses are arranged in an overall pattern defined by Lodi's historic growth. Like many early farming communities, the city first developed along the Oakland-Sacramento Central Pacific Railroad when the Town of Mokelumne, as the city was originally called, was founded in 1869. Stores developed on the west side of the railroad around Sacramento, Pine, and Elm streets, and a flour mill anchored the east side at Main at Locust streets. Industrial uses continued to grow around the rail lines, and commercial uses around the railroad depot, where downtown is today. Residential areas developed in piecemeal in the areas between the central industrial and commercial core and the outlying agricultural lands.

Over time, commercial development stretched out along corridors—such as Kettleman and Cherokee lanes—with residential development emerging between them. Industries located along the Union Pacific Railroad and its spurs, and later expanded eastward, in the area now extending between SR-99 and the Central California Traction Railroad. In recent years, larger retail establishments have developed along the western portion of Kettleman Lane.

Residential use dominates the urban area, with some historic neighborhoods near downtown, and newer subdivisions spread between commercial corridors and extending west and south to the city's edge. Underutilized and vacant lands form a transitioning edge along the southern, western, and eastern perimeter of the city, but in the 2000s began filling up with new developments. Beyond the City limits, prime agricultural lands surround the city and contribute to its economy.

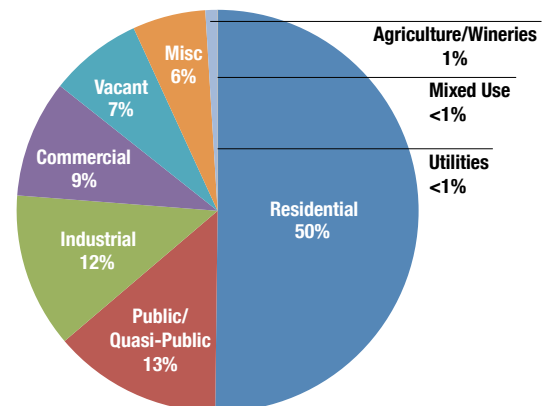
Lodi today contains diverse land uses, quiet neighborhoods, and reputable vineyards. Its land use pattern is also characterized by multiple commercial corridors; public uses, including parks, schools, hospitals, and places of worship; and established residential neighborhoods with a diverse architectural palette, from historic to contemporary. With its compact form, vibrant historic downtown, and industrial employment base

with emphasis on wine and food industries, Lodi has distinguished itself from other towns and cities in the San Joaquin Valley.

### Land Use Distribution

Major land uses in Lodi's city limits (excluding White Slough, streets and other rights of way) are residential (50%); public and quasi-public including schools (13%); industrial (12%); commercial, including retail and office (9%); vacant land (7%); miscellaneous land, including County, State, and parking areas (6%); agriculture and wineries (1%), utilities (<1%), and mixed-uses (<1%), as shown in Chart 2-1 and Table 2-1.

**CHART 2-1: LAND USE WITHIN CITY LIMITS, EXCLUDING WHITE SLOUGH**



Source: Dyett & Bhatia, 2007.



**TABLE 2-1: EXISTING (2007) LAND USE WITHIN CITY LIMITS, EXCLUDING WHITE SLOUGH**

EXISTING LAND USE	ACRES
Residential	2,796
Single-Family	2,339
Duplex	101
Multi-Family	289
Mobile homes	46
Senior Housing	20
Agriculture	55
Agriculture	48
Vineyard	7
Commercial	526
Hotels/Motels	19
Commercial	298
General Commercial/Shopping Center	103
Office	82
Medical Office, Clinics, Hospitals	25
Mixed Use	31
Industrial	693
Light Industrial	500
Heavy Industrial	181
Storage/Warehouse	12
Public/Quasi-Public	757
Public/Quasi-Public and Parks/Open Space	463
Schools	294
Other	781
Utilities	38
Miscellaneous (County, State, parking lots)	328
Vacant	416
<b>Total</b>	<b>5,639</b>

Source: Dyett & Bhatia, 2007.



Lodi's variety of land uses contribute to the city's identity and livability.



Single-family homes are the predominant housing types found in Lodi.



Commercial uses are typically located along the city's major corridors. Offices are more limited and are scattered throughout the city; still, Lodi Memorial Hospital is one of the city's largest employers.

## Residential Uses

Residential uses represent 2,796 acres or about 50% of total land area. A large proportion of residential land area in the city (84%) is devoted to single-family housing units. Multi-family housing composes 10% of the land area, duplexes compose 4%, and mobile homes and senior housing composes the remaining 2% and 1% of the residential land area, respectively. According to the California Department of Finance (DOF), Lodi had a population of 63,362 living in 23,353 housing units in 2008.

## Non-Residential Uses

### *Industrial Uses*

After residential, industrial is the next major land use in Lodi, accounting for 693 acres, or 12% of the city's land area. Large industrial users are located at Turner Road and South Mills Avenue, and scattered east of SR-99. The area east of SR-99 is also interspersed with warehouses and large vacant parcels. Along the railroad between Cherokee Avenue and Main Street, there are smaller industrial uses, small vacant parcels and residential lots.

### *Commercial Uses*

Overall, commercial use accounts for 9% of Lodi's urbanized land area, with 526 acres. Of this, small or mid-sized commercial is the most dominant subcategory at 298 acres, or 5% of Lodi's total land use. General commercial and shopping centers compose 103 acres (2%) and hotels/motels 19 acres (less than 1% each). Commercial uses are concentrated in downtown and along several major corridors, including Kettleman Lane, Cherokee Lane, and Lodi Avenue.

### *Office and Medical Facilities*

Offices and medical facilities occupy only a small portion of Lodi's land area, totaling 82 and 25 acres of land area, respectively (each less than 1% of the land area). This low proportion is not surprising given that few major employers in Lodi are in the services, finance, and insurance sectors. Offices are concentrated in four areas: downtown, Kettleman Lane, Ham Lane, and the industrial zone on

the east side of the city. In terms of medical facilities, Lodi Memorial Hospital is one of the largest employers in Lodi and the 14th largest employer in San Joaquin County.<sup>1</sup> The private not-for-profit hospital has two campuses and various facilities clustered around Ham Lane and South Fairmont Avenue, comprised of the hospital, clinics, medical offices, and laboratories. Moreover, the Blue Shield call center in the southeast portion of the city represents an expansion of office uses and may serve as a driver for other employment uses in this area.

### *Mixed-Use*

Mixed-use developments, for the purposes of discussion here, are those with a combination of residential, retail, and/or office uses within the same parcel. In Lodi, mixed-use development usually encompasses retail or office use on the first floor, and residential or office use on the second floor. In total, mixed-use developments make up 31 acres (less than 1%) of the city, mostly in downtown.

### *Agriculture*

Lodi wines and grapes are the pride of the region, but most agriculture activity takes place outside city limits. Agricultural uses encompass 55 acres (1%) of the City's incorporated limits; virtually all of this land is located in the newly annexed areas that have proposed or approved plans for urban development.

### *Public and Quasi-Public Uses*

Public and quasi-public uses compose 757 acres (13%) of Lodi's urbanized land area. This is a reasonable proportion, given that Lodi is foremost a residential city, and requires services provided by public and quasi-public entities. Among all public uses, schools are the most dominant, comprising a total of 294 acres, or 5% of the city's land area. Many of the civic and public uses can be found in or around downtown, including the City Hall, public library, main police station, train station, Hutchins Street Square, and post office.

<sup>1</sup> Mundie & Associates, 2007.



Most industrial uses are located east of SR-99.



Mixed-use developments and civic uses are concentrated in and around Lodi's downtown.





Vacant sites are often found along the Union Pacific Railroad tracks in the industrial area east of SR-99.

*Utilities and Infrastructure*

Excluding roads, highways, and other rights of way, infrastructure and utilities constitute less than 1% of the city’s urbanized land area. These uses include electrical power towers and railroad buffers. Most of these are interspersed amongst industrial uses along the railroad lines.

*Vacant*

Approximately 416 acres of vacant land may be found within the city limits, representing 7% of the total land area.



Downtown captures Lodi’s history and identity, but also contains opportunities for redevelopment.



## 2.2 LAND USE FRAMEWORK

Integrating the guiding principles outlined in Chapter 1: Introduction with existing development in the city results in a compact and coherent land use framework. This framework includes a land use diagram and classification system. Overall, the General Plan designates 2,264 acres of new urban area (including parks and open space), with an additional 1,260 acres designated as Urban Reserve. The Plan also focuses infill development efforts on 673 acres, in and around downtown and along the city's existing corridors. Within these areas, approximately 64 net acres have been identified for redevelopment.

### Land Use Diagram

The Land Use Diagram in Figure 2-1 illustrates the land use framework, serving as a graphic representation of the themes and policies in the Plan. It designates the general location, distribution, and extent of land uses. The diagram is to be used and interpreted only in conjunction with the text and other figures contained in the Plan. The legend of the diagram includes the land use classifications described in the section below, which represents an adopted component of the Plan.

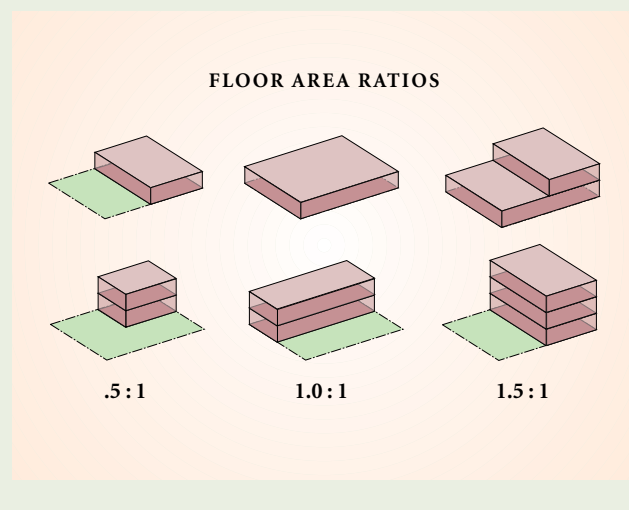
The diagram highlights several concepts: a mixed-use downtown, major commercial and mixed-use corridors, and office and industrial development east of SR-99. Residential development continues to compose the majority of the city, at a range of density levels. While the majority of new residential development will be single-family detached housing, higher density units—in the form of small-lot detached homes, townhouses and multifamily development—will comprise a larger share of residential options in the future. Medium- and some high-density housing is planned for highly accessible areas—near transit, commercial corridors, and downtown, and in and near mixed-use centers. Parks, schools, and other public facilities are dispersed throughout the city, but co-located with new mixed-use centers, to ensure a high level of accessibility to public services. New neighborhoods will have a range of housing types, focused around mixed-use centers, enabling children to walk to schools and residents to easily access stores and services.

### Land Use Classification

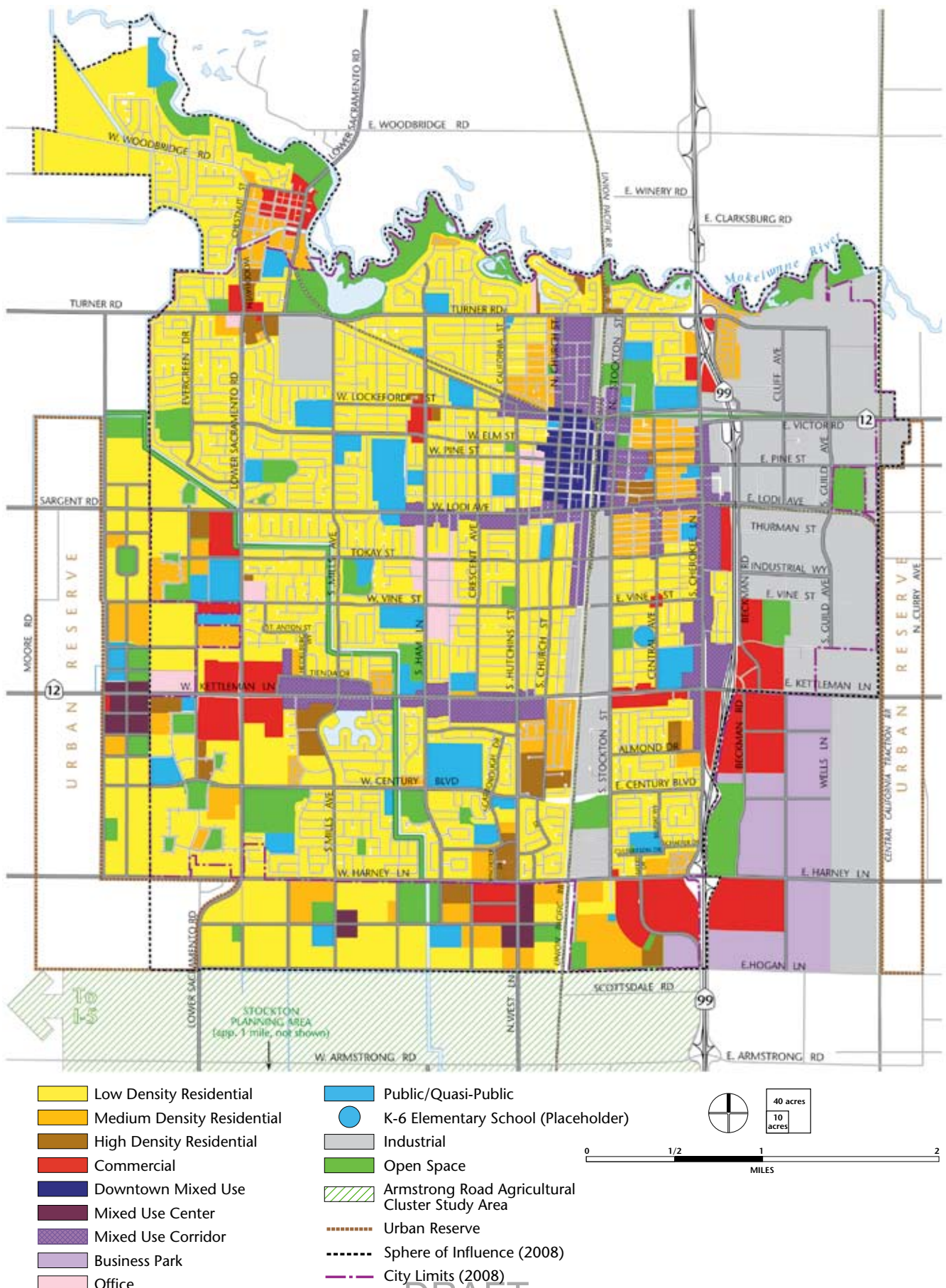
This section specifies the uses that are permitted in each land use category. Density and intensity standards are also established for each classification. Residential density is expressed as housing units per net acre (excluding existing and proposed public streets and other rights of way). The range for each residential classification defines both minimum and maximum density. Non-residential development intensity is expressed as floor area ratio (FAR), which describes the ratio of gross floor area to site area. FAR is a broad measure of building bulk and is defined as a maximum for each classification.

#### FLOOR AREA RATIO

FAR expresses the ratio of building square footage to land square footage. For example, a FAR of 2.0 means that for every square foot of land, a developer may build two square feet of building. However, this example does not necessitate a two-story building that covers the entire lot. This FAR illustration describes different ways that a building can be constructed while meeting the FAR requirement. Within each set of examples, the building square footages are equal, but the FAR changes. (Note that this illustration does not account for additional setback and lot coverage requirements, described in the Zoning Ordinance.)



### FIGURE 2-1: LAND USE





## Residential

In addition to densities stipulated below, the Zoning Ordinance may specify FARs for residential development in some areas, such as traditional neighborhoods around downtown, to ensure compatibility of housing size to lot size and overall neighborhood development pattern. Residential density ranges overlap across classifications in order to allow for some flexibility in housing type.

### *Low-Density Residential*

This classification is intended for residential developments at densities of two to eight units per acre. This density is typical of old and new single-family neighborhoods with detached homes, such as Old Lodi and Sunwest. Most existing housing in Lodi falls under this category and the majority of new residential development will continue to be built within this density range.

### *Medium-Density Residential*

This classification is intended for residential developments at densities ranging from eight to 20 units per acre. This density range accommodates a variety of housing types, including detached or attached (townhomes) single-family houses, and two or three-story multifamily units. This type of housing exists in the eastern neighborhoods, along Church Street, south of Kettleman Lane. Within new growth areas of the General Plan, Medium-Density Residential is planned between single-family neighborhoods and higher density housing in the Mixed-Use Centers, providing a smooth transition between districts and uses. This designation is also applied east and northwest of downtown to define areas where reinvestment of medium-density housing should be prioritized.

### *High-Density Residential*

This classification is intended for residential development at densities of 15 to 35 units per acre. This density range includes townhomes and stacked multi-family housing, which due to their higher density concentration may provide more affordable rental and ownership



Residential classifications accommodate a range of density levels, but single-family housing will continue to be the predominate housing type.

housing opportunities as well as lifestyle options. This type of development in Lodi is generally dispersed around downtown and along Kettleman Lane. Within new growth areas of the General Plan, High-Density Residential is strategically located near parks, public facilities and Mixed-Use Centers, supporting these amenities and the development of new neighborhoods. This designation is also applied to a small area just east of downtown to define where reinvestment in high-density housing should be prioritized.



Commercial and office classifications allow for large and small businesses.

## Commercial, Office, and Industrial

These non-residential designations describe a range of intensities and uses for commercial, office, and industrial uses. This range provides land area for different types and sizes of users, in a way that is compatible with surrounding development.

### *General Commercial*

The classification provides sites for retail uses, including citywide shopping centers with off-street parking, neighborhood shopping with clusters of street-front stores, and hotels. This category includes large-parcel retail uses around Lower Sacramento Road and Kettleman Lane and highway-oriented commercial development near the exits of SR-99, as well as smaller-scale retail uses, including around the intersection of Vine Street and Central Avenue. The maximum FAR for this designation is 0.6.

### *Office*

This classification describes administrative, financial, business, professional, and medical offices, including Lodi Memorial Hospital. Support commercial uses are also permitted, subject to limitations described in the Zoning Ordinance. The maximum FAR for this designation is 0.6.

### *Business Park*

This classification is intended for office activities that generate high employment yield per acre. This designation accommodates campus-like environments for corporate headquarters and other office parks. This



category includes the Blue Shield call center and designated sites in the southeast portion of the city for new employment opportunities. This designation may also provide for light industrial and production facilities such as Lustre-Cal. The maximum FAR for this designation is 1.0.

### *Industrial*

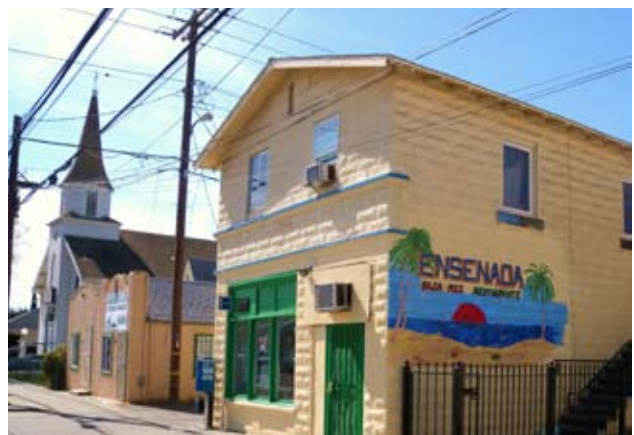
The Industrial classification includes a mix of heavy manufacturing, warehousing, general service, storage, and distribution activities. This category includes the General Mills factory and existing uses along the railroad and east of SR-99. Industrial sites are available within and adjacent to the existing cluster of industrial uses in the east side of the city. The maximum FAR for this designation is 0.6.

### **Mixed-Use**

#### *Downtown Mixed Use*

Downtown Mixed Use is intended for a variety of commercial, office, public, and medium- and high-density residential uses on infill sites in the vicinity of Lodi's downtown. This classification encompasses an expanded downtown area, across the railroad tracks and extending past Main Street. This designation seeks to enable improved connections and coherence, but does not seek to expand downtown to the Eastside neighborhood; rather, the Eastside is expected to maintain its own character.

Retail uses or eating and drinking establishments are required at the ground level (see Chapter 4: Community Design and Livability for specified sites). This category will maintain the mix, scale and character of downtown development, while providing opportunities for redevelopment of vacant, and underutilized sites. The maximum FAR for this designation is 3.0, which includes all residential and non-residential uses combined. At this intensity all parking is expected to be provided offsite; if on-site parking is provided, lower development intensities, as specified in the Zoning Ordinance, would be allowed.



Mixed-use development classifications accommodate a vertical and horizontal mix of uses downtown, along major corridors, and in new Mixed Use Centers.

### *Mixed Use Corridor*

The Mixed-Use Corridor classification includes a variety of office and general commercial uses, as well as low-, medium-, and high-density residential along the city's major corridors: Kettleman and Cherokee lanes and Lodi Avenue. This category allows for somewhat more intensive development along these corridors to take advantage of vacant and underutilized sites and provide shopping and services to residents in highly accessible corridors. The maximum FAR for this designation is 1.2.

### *Mixed Use Center*

This classification identifies new mixed-use neighborhood centers in the new growth areas of the General Plan. This category provides for a variety of residential, office, neighborhood commercial, and public uses. A minimum of 10% of the building area in each Mixed Use Center shall be composed of non-residential uses. Section 2.3: Development Potential identifies "Mixed Use Residential" units, which comprise medium- and high-density housing. Each of the three Mixed Use Centers identified in the Land Use Diagram are located near a park and school site, creating a true neighborhood center. The maximum FAR is 1.0 and the maximum height is 40 feet.

## **Public and Open Space**

### *Public/Quasi-Public*

This classification is applied to properties owned by government entities or quasi-public users. This designation includes government facilities, public and private schools, and libraries. The maximum FAR for this designation is 1.0.

### *Parks/Open Space*

This classification is intended for all parks and open spaces. This designation includes improved and unimproved parks, recreation complexes, trails, drainage basins, and cemeteries.

## **Urban Reserve (Phase 3)**

The Plan identifies Urban Reserve areas (also referred to as Phase 3 development) to provide additional area for development, if sufficient capacity to accommodate growth in the initial phases is not available. Along the western edge of the city, the Urban Reserve designation represents future land area for residential and commercial land use. (Although specific land uses have not been delineated on the Land Use Diagram, land use mixes will be similar to the new land area designated just to the east and described later in this chapter). Along the eastern edge, the Urban Reserve designation provides additional area for industrial uses, taking advantage of railroad and highway access.

## **Summary of Density and Intensity**

Table 2-2 provides a summary of density and intensity standards in the General Plan.

**TABLE 2-2: STANDARDS FOR DENSITY AND INTENSITY OF DEVELOPMENT**

LAND USE CLASSIFICATION	RESIDENTIAL DENSITY (DU/AC)	MAXIMUM FAR
Residential		
Low-Density Residential	2-8	n/a
Medium-Density Residential	8-20	n/a
High-Density	15-35	n/a
Commercial, Office, and Industrial		
General Commercial	n/a	0.6
Office	n/a	0.6
Business Park	n/a	1.0
Industrial	n/a	0.6
Mixed-Use		
Downtown Mixed Use	8-35	3.0
Mixed Use Corridor	2-35	1.2
Mixed Use Center	8-35	1.0



Development potential is calculated based on assumptions of new commercial and residential development that could be built under the General Plan land use designation and densities/intensities. These assumptions enable calculation of projected population and employment, and allow the City to plan for growth and infrastructure accordingly. Development potential is reported by phase as shown in the graphic below. These phases are discussed in more detail in Chapter 3: Growth Management, but are summarized here:

- the Kettleman and Harney lane interchanges of SR-99.

- 
- The map illustrates the proposed Urban Reserve and the location of the proposed Clarksville Community Center. The Urban Reserve is shown as a large yellow area on the left and right sides of the map. The proposed Clarksville Community Center is located in the central area, near the intersection of E. Main St. and S. Main St. The map also shows major roads like E. Main St., S. Main St., and S. Central St., and the Missouri River to the north.
- Legend:
- Phase 1 (Dark Orange)
  - Phase 2 (Medium Orange)
  - Phase 3 (Light Orange)

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## Recently Approved Development

Existing development trends are included in the overall development potential of the General Plan. While Lodi's growth in recent years has been incremental on generally smaller parcels, the scale of the most recent major development projects—including the Southwest Gateway Project, Westside Project, and Blue Shield/Reynolds Ranch—is unprecedented in the city's history. Table 2-3 describes recently approved development projects.



Recently completed and approved projects in Lodi are expanding development at the urban edge.

**TABLE 2-3: APPROVED DEVELOPMENT PROJECTS**

PROJECT NAME	HOUSING UNITS	COMMERCIAL (SF)	HOTELS (ROOMS)	OFFICE (SF)	PUBLIC/ SCHOOLS (ACRES)	PARK/ BASIN (ACRES)
FCB Westside	773	-	-	-	10	25
FCB SW Gateway	1,363	-	-	-	14	27
Legacy Homes	217	-	-	-	-	-
Kirst Estates	65	-	-	-	-	-
Century Meadows One	129	-	-	-	-	-
BSC/ Reynolds Ranch	1,084	700,000	104	268,000	-	21
KB Homes Villas	80	-	-	-	-	-
Hampton & Comfort Inn	-	-	190	-	-	-
<b>Total</b>	<b>3,711</b>	<b>700,000</b>	<b>294</b>	<b>268,000</b>	<b>24</b>	<b>73</b>

Source: City of Lodi, 2008.

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## General Plan Development Potential

### Residential

Phase 1 of the General Plan accommodates approximately 4,400 new housing units, as shown in Table 2-4. Low-density housing (primarily single-family detached units) continues to be the most prevalent housing type under the General Plan, comprising nearly half of all housing units. Medium-density housing constitutes 27% of all housing; mixed-use developments represent 20%; and high-density units represent 7%. Notably, the higher density housing represents a more efficient use of land: although the high-density and mixed-use residential units represent 27% of all units, the land area allocated for these units only compose 8% of total residential acres. By comparison, low-density housing comprises 70% of total residential acres.

An additional 5,700 units could be developed in phases 2 and 3. Phase 2 would include a similar mix of residential densities, while Phase 3 is assumed to include primarily low-density housing with some medium-density housing in appropriate areas. In sum, existing housing units, approved development projects, and net new units could result in 37,200 housing units.

### Population

Phase 1 of the General Plan could add 11,400 new residents to Lodi. An additional 5,000 and 10,000 residents could be expected if Phase 2 and Phase 3 were developed, respectively. Accounting for the current population as well as new residents anticipated from recently approved projects, the General Plan could result in 99,500 residents, representing an annual growth rate of 2% (see Table 2-5). This potential meets the maximum population permissible under the City's Growth Management Ordinance.

**TABLE 2-4: POTENTIAL HOUSING UNITS**

PHASE	HOUSING UNITS
Phase 1	4,400
Low-Density	2,000
Medium-Density	1,200
High-Density	300
Mixed Use Residential	900
Phase 2	1,900
Phase 3 (Urban Reserve)	3,800
Approved Projects	3,711
Existing (2008)	23,353
<b>Total General Plan</b>	<b>37,200</b>

Note: Total does not sum exactly due to rounding.

Source: Dyett & Bhatia, 2009; DOF, 2008.

**TABLE 2-5: POTENTIAL POPULATION**

PHASE	POPULATION
Phase 1	11,400
Phase 2	5,000
Phase 3 (Urban Reserve)	10,000
Approved Projects	9,700
Existing (2008)	63,400
<b>Total General Plan</b>	<b>99,500</b>

Note: Total does not sum due to rounding.

Source: Dyett & Bhatia, 2009; DOF, 2008.

## Non-Residential

Table 2-6 summarizes net new development, by land use. Business Park and Industrial represent the largest non-residential land uses, with proposed development concentrated on the eastern portion of the city. Across all three phases, the Plan accommodates 7.3 million square feet of industrial development, 5.6 million square feet of office development, and 4.2 million square feet of commercial development (primarily General Commercial with some Neighborhood Commercial in Mixed-Use Centers). In addition, approximately 350 hotel rooms are included on the General Commercial square footage area. Areas identified for mixed-use development on the Land Use Diagram are broken down and reflected in the General Commercial, Neighborhood Commercial and Business Park designations in the table below.

Parks and drainage basins total 210 acres, resulting in a combined ratio of eight acres of open space per 1,000 new residents. This ratio is consistent with the standard set in the 1991 General Plan and the 1994 Parks Master Plan. Acreage for Public/Schools totals to 67 acres, allowing for five schools serving Kindergarten through eighth grade and other public facilities. (A generalized location for an additional Kindergarten through sixth grade school site is shown near Central Avenue and East Poplar Street, but is not reflected in the table.)

**TABLE 2-6: POTENTIAL NET NEW NON-RESIDENTIAL DEVELOPMENT**

LAND USE	PHASE 1	PHASE 2	PHASE 3	TOTAL
Business Park (sf)	1,099,000	3,474,000	0	<b>4,572,000</b>
Office (sf)	580,000	65,000	380,000	<b>1,025,000</b>
General Commercial (sf)	3,127,000	246,000	559,000	<b>3,932,000</b>
Neighborhood Commercial (sf)	134,000	65,000	47,000	<b>245,000</b>
Industrial (sf)	3,089,000	2,012,000	2,220,000	<b>7,322,000</b>
Parks and Open Spaces (acre)	75	55	80	<b>210</b>
Public/Quasi-Public (acre)	23	14	30	<b>67</b>

Note: Total does not sum exactly due to rounding.

Source: Dyett & Bhatia, 2009.



## 2.4 ECONOMIC DEVELOPMENT

Lodi's economic base has historically been concentrated on agriculture and manufacturing. Agriculture is a natural result of the city's location in one of the most fertile areas in the world. Manufacturing businesses have been attracted by the city's relatively inexpensive electricity, coupled with excellent access to transportation routes and facilities as well as a location that is central to the markets of the western United States. Today, tourism is a growing sector of the basic economy as well: visitors are attracted primarily by Lodi's premium wine industry. Finally, local-serving activities—primarily retail trade, services of all types, and local government (including education)—complement the basic activities and comprise the major part of the Lodi economy.

While most economic development activity occurs in the private sector, the City can work to: ensure City policies do not impede the needs of businesses to move or expand; facilitate and act as a catalyst for development in strategic market segments, especially those that may spur other activities or provide fiscal benefits; coordinate and provide for infrastructure improvements; and generate revenue to support community development objectives.

### Economic Sustainability and Growth Opportunities

The General Plan seeks to provide balanced land uses that generate adequate revenue to pay for the cost of services provided. A combination of office, retail, and visitors services and attractions, provide a range of jobs for local workers and revenue streams for the City government. The new growth areas provide land for potential large employment opportunities, akin to the Blue Shield call center or for industrial users. Highway-adjacent commercial designations may attract commercial users who favor highway accessibility. Smaller businesses and specialty stores are accommodated along the city's existing corridors, downtown, and in the new Mixed-Use Centers.

As a long-term planning document, the General Plan may span several local and economic cycles of growth



Retail and tourism represent two major opportunities for economic development.

and retrenchment. The Plan does not attempt to respond to the current economy; rather it seeks to provide a framework for logical growth and a balance of land uses. In particular, the multi-faceted land use approach will allow the city to be flexible and resilient as market conditions change.

## **Retail**

According to the State Board of Equalization, the number of retail outlets in Lodi has increased during the past decade, particularly from the addition of restaurants, auto dealers and suppliers, home furnishing stores, and other specialty stores. When the number of retail outlets in Lodi increase, so do the value of taxable sales, suggesting that the existing and evolving retail offerings continue to appeal to Lodi residents and/or visitors.

Lodi will face retail competition not only from the existing developments within the city, but also from shopping centers in north Stockton and expanding retail development in Elk Grove and other communities along SR-99. These new centers will be substantially supported by the residents of those communities, but will also look to the greater region, including Lodi, for added customers. Lodi's ability to compete and attract regional retailing, including apparel and specialty stores, will depend on not only on the amount of market support available from existing and new households, but also on the locations of available sites and the speed/ease of the approval process.

## **Tourism**

### *Wine-Related*

With the emergence of Lodi as a premium wine grape region, the city has the potential to attract increased visitor activity, which could in turn help to strengthen the local economy. Visitors support the hotel/motel sector along with dining establishments and, potentially, specialty stores that provide an attractive recreational shopping experience that is one element of a weekend getaway. The Lodi region is increasingly attractive to Central Valley residents who desire a wine-oriented getaway but are put off by the traffic congestion on

routes that would take them to the Napa Valley, as well as others from the Bay Area. The meeting and concert facilities at Hutchins Street Square are another draw.

Background studies for the General Plan postulate that if Lodi could attract one-eighth of the visitor spending that the Napa Valley does, spending would amount to about \$115 million per year.<sup>2</sup> To support the increased hotel needs, the General Plan accommodates 350 new hotel rooms, bringing the total number of rooms in the city to approximately 975 (including approved/under construction hotels).

However, tourism related to agricultural activity, including wine grapes and wine tasting, is highly seasonal: peak seasons are in the fall, during the crush and, to a lesser degree, during the spring when the weather is nice and the grapes are beginning to show on the vines. In addition, visitor activity exhibits a cycle of intense activity on the weekends and significantly less activity on weekdays. These extremes of peak and off-peak visitation by season and by weekday and weekend create formidable challenges for visitor accommodations and for restaurants that cater to the visitor market.

### *Other Attractions*

Maintaining an attractive downtown, and strengthening the retail base of downtown, and presenting a welcoming atmosphere are also keys to fostering tourism. Lodi must not only attract visitors, it must entice them to stay overnight and to spend money within the City for tourism to be an effective economic and fiscal tool. Programming at Hutchins Street Square could contribute to this effort, but the level of activity/number of performances would have to increase for the facility itself to become a more powerful destination for out-of-town-ers. In addition, the Grape Bowl, Softball Complex, the proposed DeBenedetti Park, and the City's other sports complexes are prime facilities for athletic tournaments. Such events could attract new visitors and families to Lodi, who would be staying in hotels, eating in restaurants, and enjoying Lodi's visitor facilities.

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<sup>2</sup> Napa County Conference and Visitors Bureau and Purdue Tourism and Hospitality Research Center, Napa County Economic Impact Study, An Executive Report, March 2006 and City of Lodi General Plan Update, Working Paper #3: Growth & Economic Development Strategy, July 2007.

## Office/Industrial

Continued vitality of the wine grape industry, availability of affordable power, and access to transportation will support Lodi's efforts in attracting business. The General Plan designates new office and industrial parcels for development east of SR-99. The City should focus its economic development efforts in the office and industrial sectors on companies that have some functional relationship to Lodi's existing economy with (e.g. plastics companies, food processing) or on companies that require a central California location but do not find Stockton or Sacramento appealing. Blue Shield's decision to remain in Lodi, moving to a larger facility, reinforces the importance of a reliable power supply and a steady labor force.

Attracting a regional headquarters of a large company could have the dual benefit of creating jobs while also enabling hotel development and occupancy. Larger

businesses require regular visits from associated suppliers, clients, and company personnel located in other cities. The promise of business trip-related activity would help a hotel/motel justify a new location in an area where tourism is a highly seasonal activity.

## Regional Industries and Employment

### Recent Trends

According to the California Employment Development Department (EDD), in San Joaquin County, the number of jobs increased by 32% during the 15-year period between 1992 and 2007 (see Table 2-7). Sectors that accounted for the greatest shares of total employment in 2007 were trade, transportation and utilities (17%) and government (14%).

The sectors that gained the greatest numbers of jobs countywide during the 15-year period were construction

**TABLE 2-7: HISTORICAL EMPLOYMENT IN SAN JOAQUIN COUNTY**

<b>JOBS, BY TYPE</b>	<b>1992</b>	<b>2007</b>	<b>% OF TOTAL IN 2007</b>	<b>% CHANGE, 1992-2007</b>
Total Farm	15,100	12,200	6%	-19%
Total Non-Farm	152,000	209,200	94%	38%
Trade, Transportation and Utilities	31,900	50,300	17%	58%
Government	35,300	40,900	14%	16%
Retail Trade	19,000	26,900	9%	42%
Educational and Health Services	18,000	26,100	9%	45%
Manufacturing	21,900	21,300	7%	-3%
Professional and Business Services	10,200	18,500	6%	81%
Leisure and Hospitality	12,000	17,700	6%	48%
Construction	6,500	15,500	5%	138%
Transportation, Warehousing and Utilities	6,900	13,500	5%	96%
Nondurable Goods	11,200	10,700	4%	-4%
Durable Goods	10,700	10,600	4%	-1%
Financial Activities	8,700	9,800	3%	13%
Wholesale Trade	6,000	9,900	3%	65%
Other Services	5,100	6,400	2%	25%
Information	2,300	2,500	1%	9%
Natural Resources and Mining	100	200	<1%	100%
<b>Total</b>	<b>167,100</b>	<b>221,400</b>	<b>100%</b>	<b>32%</b>

Source: EDD, 1992 and 2007.

(+9,000 jobs), professional and business services (+8,300 jobs), education and health services (+8,100 jobs), retail trade (+7,900 jobs), and transportation/warehousing/utilities (+6,600 jobs). Leisure and hospitality (which includes arts/entertainment/recreation, accommodations, and food services/drinking places) and government also gained substantial numbers of employees (+5,700).

Farming activities saw the greatest decrease in jobs, declining by 19% (-12,200 jobs). The only nonfarm industrial sector that lost employment during this period was manufacturing (-600 jobs, or about 3% of the total in 1992). This loss was shared by durable goods

(which includes plastics, a significant contributor to Lodi's economy; -100 jobs, or 1%) and nondurable goods (which includes food processing, another significant contributor to Lodi's economy; -500 jobs, or about 4%).

## Projections

The San Joaquin Council of Government (SJCOC) projects that the County will have nearly 289,500 jobs by 2030. This would represent a 31% increase over 2007 employment.

**TABLE 2-8: NUMBER OF PRIVATE SECTOR EMPLOYERS IN LODI, BY INDUSTRY**

INDUSTRY CODE DESCRIPTION	NUMBER OF ESTABLISHMENTS	PERCENT OF ESTABLISHMENTS
Retail Trade	205	12%
Construction	175	10%
Accommodation and Food Services	156	9%
Health Care and Social Assistance	134	8%
Other Services (except Public Administration)	128	8%
Manufacturing	110	6%
Real Estate & Rental & Leasing	103	6%
Wholesale Trade	101	6%
Finance and Insurance	94	6%
Professional, Scientific & Technical Services	92	5%
Educational Services	74	4%
Information	68	4%
Mining	64	4%
Arts, Entertainment & Recreation	57	3%
Admin, Support, Waste Mgt, Remediation Services	52	3%
Transportation and Warehousing	43	3%
Management of Companies and Enterprises	28	2%
Forestry, Fishing, Hunting, and Agriculture	8	<1%
Unclassified Establishments	7	<1%
<b>Total</b>	<b>1,699</b>	<b>100%</b>

Note: Data for zip codes 95240, 95241, and 95242.

Source: County Business Patterns, 2006



## Local Industries and Employment

### Recent Trends

#### *Industries*

County Business Patterns, published by the U.S. Department of Commerce, provides an extensive list of private businesses in Lodi as shown in Table 2-8.<sup>3</sup> This list shows that the greatest number of businesses in Lodi are in the retail sector; followed by the construction businesses; accommodation and food services; and health care and social assistance establishments.

Lodi's largest employers and industries are in the tourism, plastics, and manufacturing industries, as shown in the text box at right.

#### *Employment*

SJCOG estimated that there were 23,438 jobs in Lodi in 2005. Inflating this 2005 value and using SJCOG's projections for 2010, there were approximately 24,655 in 2008. In terms of employed residents, the city has seen a slight decrease in employment and corresponding increase in unemployment between 2007 and 2008. In 2008, EDD reported 32,000 persons in the labor force and an unemployment rate of 7.8%, a slight increase over the 6.0% rate in 2007. The job market in Lodi is somewhat better than in the County as a whole, which reported a 10.4% unemployment rate in 2008.

#### *Income and Affordability*

According to EDD, average individual annual wage levels in San Joaquin County were \$40,184 in the first quarter of 2008. Within Lodi and at the household level, the American Community Survey (ACS) three-year estimates for the 2005 to 2007 period, report median income at \$48,074 annually.

The ACS also provides an indicator for housing affordability, reporting the percent of income spent on housing. Fifty-eight percent of renter households and 38% of owner households spent more than 30% of their

<sup>3</sup> County Business Patterns includes most private employers; it excludes data on self-employed individuals, employees of private households, railroad employees, agricultural production employees, and most government employees.

### LODI'S LARGEST EMPLOYERS AND INDUSTRIES

WINE, FOOD, TOURISM, AND AGRI-BUSINESS	PLASTICS	MANUFACTURING AND GENERAL SERVICES
<ul style="list-style-type: none"> <li>Cottage Bakery</li> <li>General Mills, Inc.</li> <li>Miller Packing Company</li> <li>Pacific Coast Producers</li> <li>Wine and Roses Inn &amp; Spa</li> </ul>	<ul style="list-style-type: none"> <li>CertainTeed Corporation</li> <li>Dart Container Company</li> <li>Epic Plastics</li> <li>Quashnick Tool Corporation</li> <li>Schaefer Systems International</li> <li>Scientific Specialties Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Blue Shield of California</li> <li>Holz Rubber Co.</li> <li>Kubota Tractors</li> <li>LMI/All Country Glass</li> <li>Lodi Iron Works</li> <li>Lustre-Cal Nameplate Corp.</li> <li>Valley Industries</li> </ul>

Source: City of Lodi, 2006.



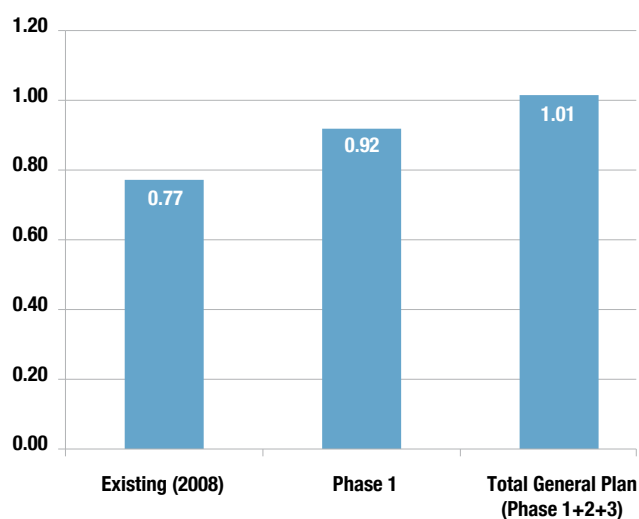
Lodi's largest employers are in the wine/food, plastics, and manufacturing sectors.

**TABLE 2-9: POTENTIAL EMPLOYMENT**

	NUMBER OF JOBS
Phase 1	11,600
Phase 2	8,600
Phase 3	3,200
Approved/Completed Projects	2,900
Existing (2008) <sup>1</sup>	24,700
<b>Total</b>	<b>51,000</b>

<sup>1</sup> 2008 value estimated from 2005 and 2010 projections.  
 Note: Total does not sum exactly due to rounding.

Source: Dyett & Bhatia, 2009; SJCOG, 2004.

**CHART 2-2: JOBS/EMPLOYED RESIDENTS RATIO**

household income on rent and ownership costs, respectively. This threshold is generally considered to be above the cost burden, suggesting that incomes are not sufficient to meet housing costs, particularly for renters. The Plan provides for a greater range of housing types and sufficient land for employment in order to improve both housing affordability and job opportunities.

## Projections

The total additional employment accommodated in the General Plan by new commercial, office, industrial, and mixed-use land designations could allow for 11,600 new jobs in Lodi, as shown in Table 2-9. Phase 2 and 3 could add 8,600 and 3,200 jobs, respectively, resulting in over 23,000 jobs between all three phases. Additional jobs would be created by new schools, public facilities, and construction needs. Recently approved or completed development projects (such as the Blue Shield call center and retail sector jobs as part of the Reynolds Ranch development) are expected to produce an additional 2,900 jobs. In sum, Lodi could expect up to 51,000 jobs under the General Plan.

The General Plan projects a more balanced jobs/employed residents ratio compared with the city's past ratio, as shown in Chart 2-2. In 2008, Lodi had a jobs/employed residents ratio of 0.8, meaning that the city did not have quite enough jobs for all the working people who lived there, even if the match between job skills required and job skills offered had been perfect. The General Plan designates land area for substantial employment growth, should market opportunities exist, resulting in an improved ratio of 0.9 through Phase 1 and a potentially balanced jobs/employed residents ratio of 1.0 under full General Plan development. This latter ratio suggests that the city would have about as many jobs as employed residents.<sup>4</sup>

<sup>4</sup> The projected jobs/employed residents ratio uses the same proportion of employed residents in the total population from 2000 (51%) to estimate the potential workforce in 2008 and in the future.

## 2.5 POLICIES

*For policies relating to phasing and growth management, see Chapter 3: Growth Management and Infrastructure. For policies relating to urban design and community character, see Chapter 4: Community Design and Livability.*

### GUIDING POLICIES

- LU-G1** Create a balanced and sustainable land use pattern that provides for a diversity of uses and satisfies existing and future needs.
- LU-G2** Encourage development of downtown as a mixed-use activity center with a range of commercial, residential, and civic uses.
- LU-G3** Promote revitalization of key commercial spines of the community with focused, mixed-use development.
- LU-G4** Foster development of walkable new neighborhoods, with a mix of uses and diversity of housing types.
- LU-G5** Maintain land use patterns that maximize residents' access to parks, open space, and neighborhood shopping centers.
- LU-G6** Ensure the continued economic sustainability of the community and fiscal health of the City government.
- LU-G7** Strengthen the City's economic base and provide employment opportunities for residents to achieve a more balanced jobs/housing ratio.

### IMPLEMENTING POLICIES

#### Use Classifications and Land Use Program

- LU-P1** Update the City's Zoning Ordinance and Subdivision Regulations contained in the Municipal Code for consistency with the General Plan, including the General Plan Diagram.

Zoning changes that will need to be made include:

- Establishment of new base districts, consistent with the land use classifications in the General Plan, such as for mixed-use centers, corridors and downtown; and
- New development regulations that reflect policy direction contained throughout the General Plan (e.g. parking standards).

- LU-P2** Require sites designated for mixed-use development—downtown, corridors, and in new neighborhood centers—to be developed with a variety of residential and non-residential uses, in accordance with the General Plan designation.

- LU-P3** Do not allow development at less than the minimum density prescribed by each residential land use category.

- LU-P4** Maintain the highest development intensities downtown, and in mixed-use corridors and centers, with adequate transition to Low-Density Residential neighborhoods.

#### Land Use Pattern

- LU-P5** Maintain a centralized economic development and land information system to continually monitor land use availability, ensuring sufficient land for appropriate use designations, development intensities and locations.

- LU-P6** Locate new medium- and high-density development adjacent to parks or other open space, in order to maximize residents' access to recreational uses; or adjacent to mixed-use centers or neighborhood commercial developments, to maximize access to services.

- LU-P7** Encourage new neighborhood commercial facilities and supermarkets in locations that maximize accessibility to all residential areas.

- LU-P8** Permit child-care centers in all districts except Industrial.

- Regulations would also need to be in accordance with criteria for family day care

homes established in Chapter 3.4 and Chapter 3.6, Division 2 of the California Health and Safety Code.

**LU-P9** Focus new business park growth in the southeast portion of the city and new industrial growth along the two railroad lines, as shown in the Land Use Diagram.

**LU-P10** Allow employee-serving amenities and services such as restaurants, cafés, dry cleaners, and other complementary uses in Business Park areas.

**LU-P11** Promote clustering of industrial uses into areas that have common needs and are compatible in order to maximize their efficiency. Work closely with industry contacts to identify specific needs to be addressed through development standards.

**LU-P12** Prioritize economic development activities on potential growth industries that are appropriate for Lodi, including retail and tourism, as well as office/industrial users in need of large parcels.

**LU-P13** Continue to publish a handbook and/or fact sheets of permitting procedures and fees for new and existing businesses.

**LU-P14** Partner with business and community groups to proactively pursue companies and industries and to implement economic development programs.

**LU-P15** Continue efforts to locate a hotel in conjunction with or in proximity to Hutchins Street Square.

## Downtown

**LU-P16** Promote downtown as the center of tourism, business, social, and civic life by directing high intensity office uses, government, and entertainment uses to locate downtown.

**LU-P17** Establish land use regulations and development standards in the Zoning Code to

reinforce Downtown's assets and traditional development pattern. These should include:

- Extending the Downtown Mixed Use classification to parcels along Main Street on the Eastside to improve connectivity, while retaining the respective identities of downtown and the Eastside.
- Maximum set-backs or build-to lines for development in areas designated Downtown Mixed Use.
- Requiring retail, eating and drinking establishments, or other similar active uses—except for sites designated Public—at the ground level. Alleyway corners shall be “wrapped” with retail uses as well.

**LU-P18** Encourage medium- and high-density residential development in downtown by permitting residential uses at upper levels; and east and northwest of downtown, as depicted on the Land Use Diagram, by identifying vacant and underutilized sites that are appropriate for redevelopment.

**LU-P19** Maintain parking regulations for downtown that are lower than elsewhere in the city, reflecting its position as a pedestrian- and transit-friendly center.

**LU-P20** Expand the Downtown Parking District to include the Downtown Mixed Use area in order to consolidate parking areas. Require all development within these boundaries to either meet the established off-street parking requirements or contribute an appropriate share to the Downtown Parking District.

## Mixed Use Corridors

**LU-P21** Allow an appropriate range of single uses or mixed-use development, with use requirements/mixes as follows:

- Kettleman Lane. Allow any mix of uses as permitted within the Mixed Use Corridor classification. Ensure that residential uses are sited at upper levels or, if at ground level, then not directly facing the highly trafficked Kettleman Lane.



- Cherokee Lane. Require that any new development/redevelopment of sites with Mixed Use designation south of Tokay Street to devote at least one-quarter of the built-up area to commercial or business park uses, while allowing the full spectrum of single or mixed-uses permitted within the designation.

**LU-P22** Lodi and Central avenues. Require any development or redevelopment of sites to have active uses—retail, restaurants, cafés, and personal service establishments—fronting the streets at the ground level. A range of compatible uses, such as residential or office, may be located at upper levels and in portions not fronting the streets.

institutional uses, parks, plazas, and open space—consistent with Land Use Diagram (unless any of these uses are found infeasible and/or alternative locations are available to carry out mixed-use policies). Streets should adhere to the pattern depicted on the Land Use Diagram.

**LU-P28** Provide for a full range of housing types and prices within new neighborhoods, including minimum requirements for small-lot single family homes, townhouses, duplexes, triplexes, and multi-family housing.

## Existing Neighborhoods

**LU-P23** Promote infill development that maintains the scale and character of established neighborhoods.

**LU-P24** Establish bulk and Floor Area Ratio standards for older residential neighborhoods surrounding Downtown to preserve their character.

## New Neighborhoods

**LU-P25** Guide new residential development into compact neighborhoods with a defined Mixed-Use Center, including public open space, a school or other community facilities, and neighborhood commercial development.

**LU-P26** Require a centrally located Mixed-Use Center within each new residential neighborhood: one west of Lower Sacramento Road and two south of Harney Lane, as shown on the Land Use Diagram. Centers should serve as a focal point for the surrounding neighborhood, be pedestrian-oriented and encourage a mix of uses to serve local needs.

**LU-P27** Require a master or specific plan in areas with a Mixed-Use Center and adjacent complementary uses, as a condition of subdivision approval. Uses should include neighborhood commercial, civic and

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The concept of livability encompasses economic and social factors such as employment opportunities, housing affordability, public services, and safety, as well as the physical form of the city. This element explores the physical factors that make Lodi a desirable place to live. It envisions a compact and sustainable city form, walkable neighborhoods, a revitalized downtown and corridors, multiple new recreational opportunities, and a continued high quality of life.

Topics addressed include city form and identity; downtown; neighborhoods and corridors; streets, connectivity and accessibility; and site planning and green building.

## 4.1 COMMUNITY DESIGN AND LIVABILITY FRAMEWORK

All scales of urban form affect livability—from the design of individual homes, to neighborhood streets and parks, to citywide systems of streets and open spaces. A highly livable city works at each scale. As growth occurs, maintaining Lodi's compact form and relationship with the regional landscape will be dominant issues. New neighborhoods and infill development will need to reflect needs of the future population, which increasingly comprises the elderly and non-traditional households, including single-person and multi-generational households. Growth will also place demands on the transportation system, resulting in increased traffic and pressure to widen and expand the street network, potentially impacting pedestrian walkability and bicycle access. Through a citywide survey and other outreach conducted for the General Plan, residents have indicated several priorities for the city's future. These include:

- Preserving Lodi's small-town character;
- Maintaining a compact form and protecting surrounding agricultural land;
- Enhancing downtown vitality;
- Revitalizing vacant or decrepit older buildings;

- Protecting agricultural land, large trees, and historic buildings;
- Increasing bikeways and pedestrian walkways; and
- Increasing park and recreational space.

### Existing Framework

In addition to the General Plan and the Zoning Ordinance, urban design in the city is guided by the Downtown Development Standards and Guidelines, developed in 1997 and the Eastside Mobility and Access Plan, developed in 2006. The Downtown Development Standards and Guidelines were developed to ensure high quality building and street design in downtown Lodi. The Eastside Mobility and Access Plan emphasizes improving safety, access, and comfort for pedestrians, cyclists, transit users and motorists between downtown Lodi and the Eastside neighborhood, focusing on Sacramento Street, Lodi Avenue and Central Avenue corridors. The Guidelines and Access Plan are consistent with the General Plan and will continue to guide development in their respective locations.



The agricultural edge provides contrast to the urban center, reinforcing Lodi's identity.



## 4.2 CITY FORM AND IDENTITY

Lodi today is a livable community. Community surveys indicate civic pride and a sense of identity. Well-situated away from the urban traffic and sprawl of the Bay Area, the city enjoys a favorable Central Valley climate. Lodi has a compact form, with visible history and a human scale. Downtown is active, well-kept, and pedestrian-oriented. Agricultural land surrounding Lodi provides a contrast to the urban center, further reinforcing Lodi's identity.

### Compact and Coherent Form

Lodi has higher population density than any other community in the county and most of the Central Valley. Growth has remained contiguous, due to incremental development on all sides of the city core. This has allowed Lodi to maintain a generally square structure, as shown in Figure 4-1. As a result, downtown and the oldest neighborhoods remain close to the geographic center of the city. Furthermore, the city's built form consists of fairly uniform layers or "belts" of development radiating from the downtown. Consequently, Lodi's neighborhoods possess consistent urban design and livability qualities without significant disruptions. Because of the absence, until fairly recently, of large-scale developments, there is diversity in building design as well. In recent decades, growth has been focused on land at the southern and western edges in particular, resulting in increasing distances from downtown.

Several characteristics make Lodi a coherent and navigable city. Lodi has a historic and identifiable downtown, surrounded by graceful neighborhoods and tree lined streets. The city lacks major obstacles within its borders, with the exception of the railroad tracks and State Route (SR) 99, much of which is depressed through the city. The urban form is further defined by the contrast to the surrounding agricultural land, which complements the urban form and provides visual and functional definition to the city's outer edge. The agricultural setting not only provides a special identity, but also sustains emerging industries in viticulture and tourism, making it an integral component of the city's identity and economic base.



Historic buildings such as the Carnegie Forum, gracious old neighborhood streets, and new neighborhood design all help define the evolution of Lodi's structure.

[illegible]

**FIGURE 4-2: URBAN EVOLUTION**

## City Structure Evolution

The typology of the neighborhoods emanating from downtown reflect their development era, with a close knit grid of streets at the core giving way to large-spaced arterials and introverted neighborhoods at the edge. This evolution is illustrated in Figure 4-2.

Lodi generally exhibits four patterns of residential neighborhood scale and structure—gridded, semi-gridded, curvilinear and varied—which roughly correspond to different eras of development. These patterns are described in the text below and in Figure 4-3. In general, neighborhoods are fairly homogeneous in their nature, rarely exhibiting a mix of land uses, parcel sizes, or street types. The only non-residential parts of Lodi that are notable in size and profile are the downtown commercial district and the industrial Eastside, which are singular areas unlike the rest of the city.

### A. Old Lodi Grid Pattern

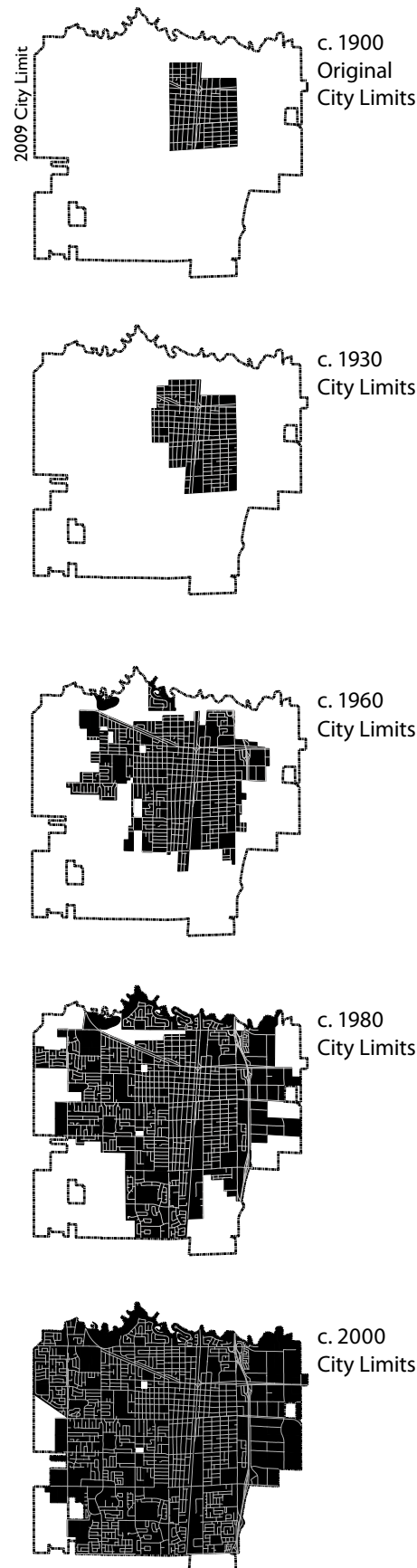
The grid pattern was established from the city's beginning in the 19th century and expanded from what is now downtown into surrounding neighborhoods through the 1950s. Downtown, Old Lodi and the Eastside neighborhoods exhibit a fine grained street grid with extensive street trees, small parcels, and small blocks, averaging approximately 350 feet by 450 feet. The short interconnecting blocks of Old Lodi predate the automobile, providing flexibility for pedestrians, bicyclists, and automobiles in moving through the neighborhood.

### B. Semi-Gridded Pattern

As newer areas radiate out of this core, the overall street grid pattern remains intact, though block lengths begin to increase. Finding space for street trees in newer residential areas is a challenge as large home frontages are devoted to garages and driveways.

### C. Curvilinear Pattern

The post-World War II period saw the introduction of the curvilinear pattern with cul-de-sacs,



t-intersections, and longer blocks, with through streets appearing only every quarter mile. Often these streets lack street trees except on larger arterials, though front yards of these residential neighborhoods are often landscaped with trees. This era also marked the introduction of large lot commercial development with large surface parking lots fronting on major arterials.

This typology remained dominant through the 1980s with the through street grid expanding in places to every half-mile in the 1960s, and further expanding to every mile by 1980. Parcel sizes also increased by nearly 50 percent when compared to parcels in the gridded areas of town. These neighborhoods lack a mix of uses within their boundaries and are largely isolated from other neighborhoods, jobs, and services.

#### D. Varied Pattern

The newest neighborhoods exhibit a mix of the semi-gridded and curvilinear patterns, often with more connectivity than a curvilinear design but longer blocks and fewer connections than the fine-scale grid found in central Lodi. This pattern is also largely isolated from other neighborhoods, jobs, and services.

#### Future City Structure

The plan strives to provide connectivity while accommodating desired residential typologies. The plan envisions the evolution of Lodi's structure as one that maintains connectivity, smaller block sizes, the use of street trees, and an integration of uses within neighborhoods. This framework is illustrated in Figure 4-4.

The northern edge of the city is well defined by the Mokelumne River. Due to limited existing connections across the river and the difficulty and expense of new connections, the Mokelumne River shall remain the City's northern edge. The Armstrong Road Agricultural/Cluster Study Area, described in Chapter 3: Growth Management and Infrastructure, will delineate the southern boundary of Lodi's urban development and

the northern border of Stockton, creating distinction and physical separation between the two cities.

The railroad currently acts as an edge between the east and west sides of the city. Connections across the railroad, in particular for pedestrians and bicycles, would unify the city and establish a more connected urban fabric. Additional edges exist along Harney Lane and Lower Sacramento Road due to walled and gated housing development. These streets will be important places to establish permeability and connectivity between proposed development and the urban center. A soft but clear transition at the agricultural and urban interface will establish the urban edge of Lodi while retaining access to the agricultural land.

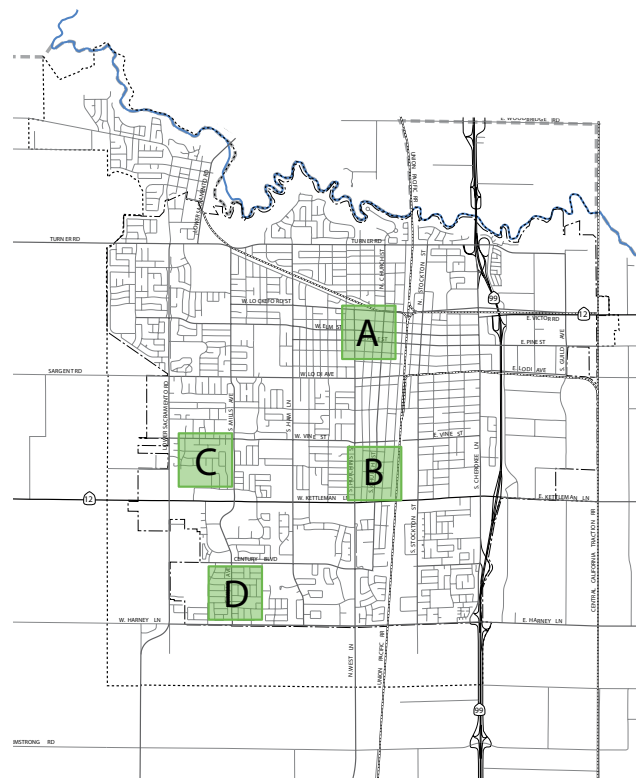




FIGURE 4-3: NEIGHBORHOOD SCALE STRUCTURE COMPARISON

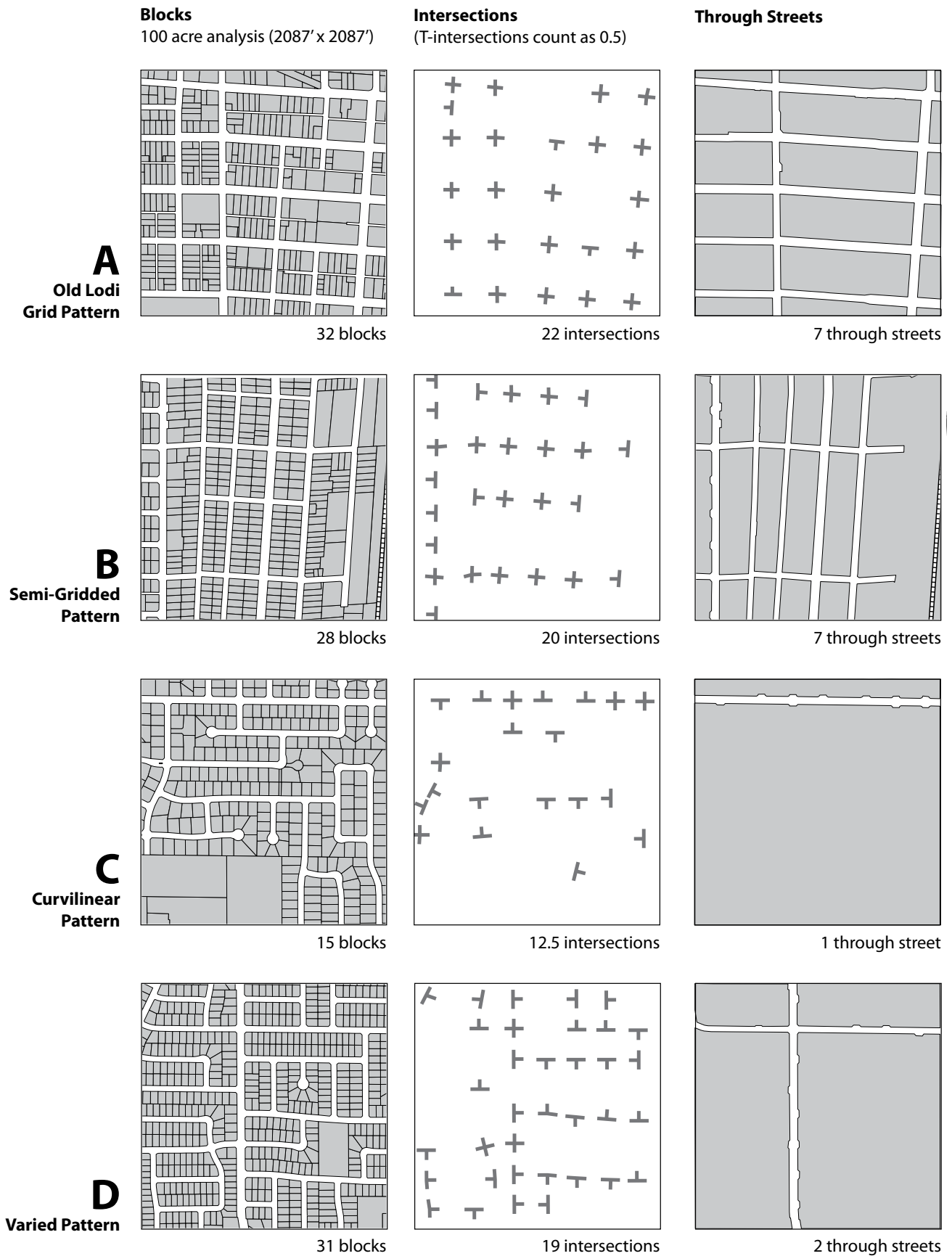
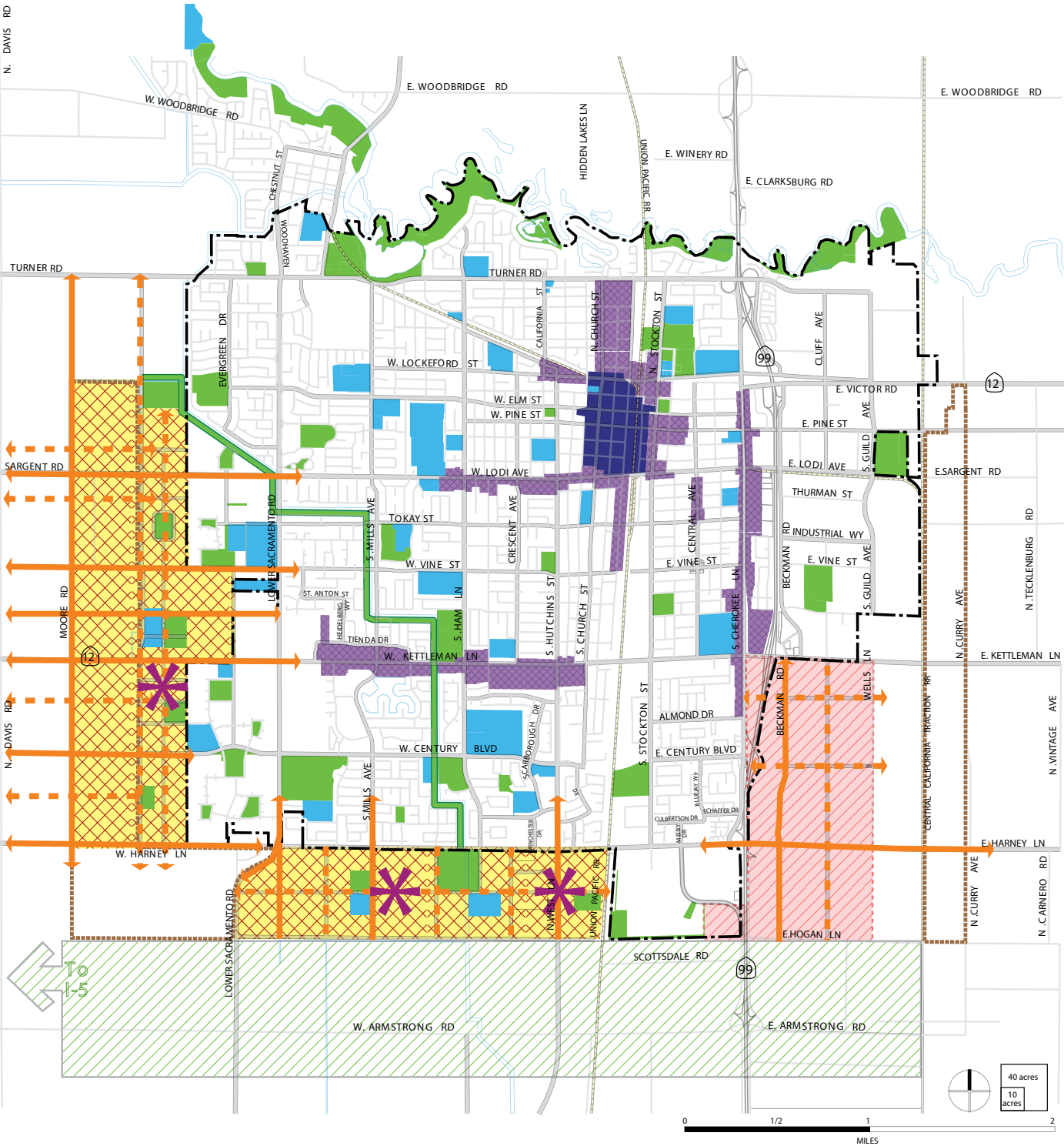


FIGURE 4-4: COMMUNITY DESIGN FRAMEWORK



- |   |   |  |
|---|---|--|
| ----- Urban Reserve                               | ----- Mixed Use Corridors   | ----- New Neighborhood                               |
| - - - - - City Limits (2008)                      | ----- Downtown  | ----- Southeast Employment Center                    |
| ----- Parks and Open Space                        | ----- Major Street Connections  | ----- Armstrong Road Agricultural/Cluster Study Area |
| ----- Public and Quasi Public (including schools) | ----- Intermediate Street Connections (depending on specific alignment and interim development) |  |
| ----- Mixed Use Centers                           |   |  |

## 4.3 DOWNTOWN

### Downtown Lodi

Downtown Lodi is located near the center of the city, roughly contained by Lockeford Street, Pleasant Avenue, the railroad, and Lodi Avenue. Downtown offers small scale retail in a vibrant pedestrian-oriented setting, and is easily accessible from nearby government offices and the surrounding residential neighborhoods. The downtown has benefited from revitalization efforts over the past decade, and the creation of Downtown Development Standards and Guidelines. Streetscape improvements to date have been made through the General Fund and Assessment District rather than through establishment of a redevelopment area, though future improvements may be dependent on some other financing structure. The streetscape, well articulated buildings, and active use of the street through outdoor dining and open air markets all contribute to the creation of a distinct and vibrant atmosphere. This plan envisions a slightly larger downtown that embraces the Eastside, extending to Main Street.

The heart of the pedestrian-oriented downtown area is along School Street. Church Street runs one block west of School Street and accommodates parking for School Street and the downtown area. Many of the parking lots accessible off of Church Street provide back door entrances or access to alleyways or arcades that access School Street. Other key north/south downtown streets include Sacramento Street and Main Street; east/west streets include Elm Street and Pine Street. The downtown area is currently one of the densest areas of Lodi, with an average floor area ratio (FAR) over 0.75 and building heights of one to three stories.

Existing development patterns and street design are effective and aesthetically pleasing. One addition that could be considered is an extended pattern of small plaza spaces as community gathering spaces, located throughout the downtown, similar to the mini-squares that exist near the Post Office and in front of the theater.



Wayfinding and historic lighting help define the downtown core.



Downtown is one of the densest areas of Lodi.



The mini-square located in front of the theater is one of many pedestrian amenities downtown.



## Downtown Mixed Use District

This plan strives to enhance and reinforce downtown as the vibrant center of the city through infill development and promoting a mix of uses, including more housing. The addition of residential uses and possibly hotel uses in the downtown core will increase demand for downtown services, contribute to the vibrancy of the area, and reduce pressure to develop outward onto agricultural land. To encourage density in the downtown core, allowable FAR will remain at 3.0, with up to six-story buildings. This is slightly taller than most buildings in downtown, but still at a height that could be well integrated into the area. These concepts are illustrated in Figure 4-5.

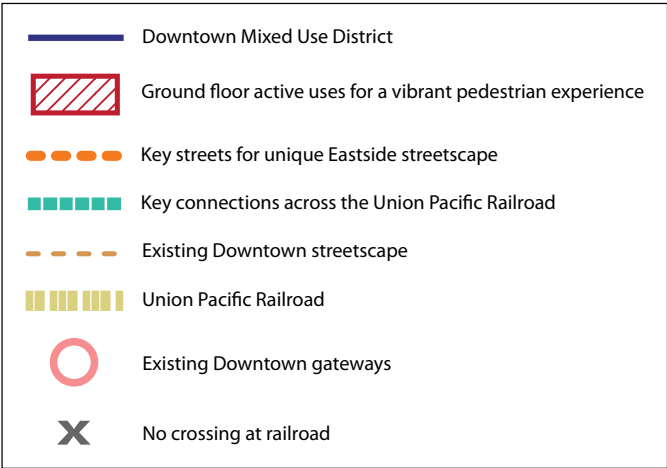
The downtown area also has the potential to expand across the railroad tracks at Pine Street and connect to Main and Stockton streets and to Hale Park. Main and Stockton streets already exhibit higher densities and mixed-uses similar to those found in the downtown area. Additional streetscaping on the eastern side of the railroad, rehabilitation of key sites, and implementation of wayfinding elements would improve the connection across the railroad and integrate this area into the downtown. While Main and Stockton streets are envisioned as part of the downtown area, it is important that they also maintain their distinct character, perhaps reflecting an art and entertainment focus.



Downtown Lodi is vibrant and pedestrian oriented.



FIGURE 4-5: DOWNTOWN MIXED USE DISTRICT



## Public Art

Public art is currently used in the city to acknowledge local historical pride. For example, throughout downtown, several murals depict Lodi's history. Public art is also part of the East Lodi Avenue Reconstruction project, including 24 mosaic medallions. Public art can be an effective means to contribute to the unique identity of a place, and can have an expanded focus in the future.



Several murals throughout Lodi add character and depict Lodi's history.

## 4.4 NEIGHBORHOODS, CORRIDORS, AND MIXED USE CENTERS

In addition to downtown, key components of Lodi's structure are corridors—such as Kettleman Lane and Lodi Avenue—and neighborhoods. While the corridors are currently dominated by auto-oriented commercial uses, the general plan seeks a greater pedestrian focus, and mixed use development in some stretches, especially closer to the core. In addition to the corridors and neighborhoods, the general plan seeks to establish mixed-use centers for new development at the edge of the existing urbanized area. This section describes the key characteristics and goals of each of these three forms.

### Neighborhoods

For many of Lodi's residents, livability begins with their neighborhood. Residential environments need to be comfortable, safe, and designed to support the needs of diverse groups including young children, adolescents, the elderly, handicapped, single adults, and families. Lodi's neighborhoods are very diverse, ranging from country roads with historic farmhouses to historic neighborhoods of Victorian cottages and California bungalows to recent large-scale master-planned developments.

Lodi's neighborhoods are largely internally consistent in their architecture and site design. Residential land in Lodi is generally single-family detached housing, developed at a density of less than eight units per acre. These densities are fairly consistent across the city's neighborhoods, with development at the urban fringes sometimes ranging from four to six units per acre. The main exception to this pattern is found in the older, gridded sections of Lodi—particularly the Eastside—where smaller parcels result in a slightly higher density and a greater mix of uses. Pockets of medium- to high-density housing can be found to the south of Kettleman Lane near Mallard Lake and off of Hutchins Street.



Low density housing in southwest Lodi, less than eight units per acre.



Medium density housing in west Lodi, 8-15 units per acre.



High density housing in southeast Lodi, over 25 units per acre.





Sidewalks in Old Lodi are continuous and tree lined, promoting walkability.



Garages sit back from homes and rarely occupy the street frontage in Old Lodi, creating a more active and pedestrian oriented streetscape.



Many Eastside neighborhood streets are treelined and pedestrian oriented.

## Old Lodi

Old Lodi is located within the gridded center of the city described above. Housing in this area is primarily single-family, but multifamily housing is well integrated into the fabric through design and landscaping that is consistent with the single-family units. Few homes have garages or driveways that break up the street.

Non-residential uses are incorporated into the predominately residential neighborhood, including public parks, stores, offices, government uses, and parking. Housing in this area is generally within 1/3 of a mile or less of commercial uses—easily within walking distance, making the neighborhood much closer to retail than any other residential area in the city. Several blocks also include alleyways, which allow garages, public utilities, and services to be accessed away from the main road, thereby maintaining continuity on the street, reducing noise, visual clutter, and traffic congestion.

## Eastside

Neighborhoods east of the railroad tracks are located within the gridded center of the city described above. Smaller commercial strips, such as along Central Avenue, provide pedestrian-oriented access to services and shopping. Multifamily housing is more common in the Eastside neighborhoods. Many Eastside neighborhoods' homes and apartments, however, are in need of rehabilitation. In addition, many residents see a need to improve connections across the railroad tracks to the city center.

## Newer Neighborhoods

Much of the recent residential development in Lodi has been at the western and southern edges of the city. These neighborhoods reflect the curvilinear and varied street patterns and tend to be auto-oriented rather than pedestrian-oriented. Garages often dominate housing frontage and break up the street curb, limiting on-street parking. Development is also generally single use in nature, with residential and commercial uses separated.

The curvilinear pattern restricts outside access to the neighborhood. Multiple curvilinear developments



create a series of residential islands interconnected only by major roadways, with travel distances that require driving. Restricting the number of access points to the larger street network can also create congestion at a few choke points, since traffic cannot easily distribute itself to other intersections. Finally, limited access points, indirect routes, and long blocks make walking an inefficient transportation choice. While some of the most recent neighborhoods have better internal connectivity than the curvilinear design, access is often somewhat limited to the broader roadway network of the city and the neighborhoods continue to lack non-residential uses.

Increasing connectivity and walkability throughout these neighborhoods could contribute to the livability of these already often pleasant neighborhoods. This can be accomplished with streetscape improvements and establishing pedestrian and bike network connections, such as paths that link cul-de-sacs.

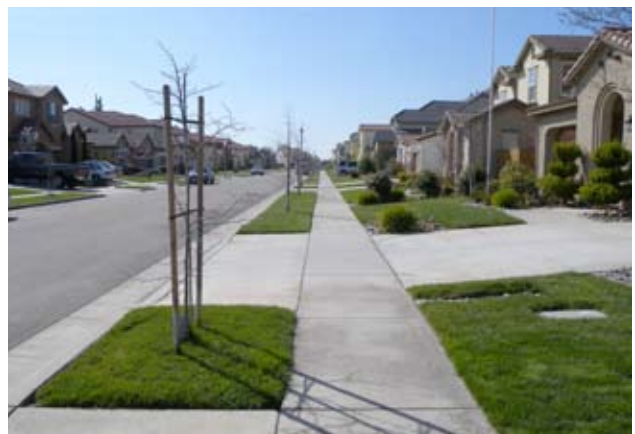
### Future Development

Infill development, particularly downtown and along key corridors, is expected to make up about a quarter of new housing in Lodi. The remaining development will occur throughout the city and at the southern and western edges of the city. These new neighborhoods are envisioned with a greater mix of uses, strong connections to commercial and public services, high quality design, and well landscaped streets. All potential street connections with the existing urban fabric will be extended through the neighborhoods.

Residential densities in this Plan allow slightly denser development than currently exists, though the majority of new development will continue to be in the form of single-family homes. Higher densities proposed for future growth in Lodi are targeted toward infill opportunities along the corridors and in downtown; and in the new mixed-use centers to complement the commercial development in those areas and to establish vibrant centers. These densities will contribute to maintenance of the compact form by avoiding unnecessary conversion of farmland and help support local businesses and transit. Regardless of density, all development must address community needs for parking, provide



Garages often dominate the frontage of newer single-family housing, detracting from the pedestrian experience.



Many of the most recent developments have started to include street trees.

adequately-sized housing units, and enable the development of accessible public open space. Ultimately it is not the density of new housing but the design and the degree to which it is integrated with local character and scale that determines whether new housing is successful.

## Corridors

Lodi's corridors establish connections within the city, define its neighborhoods, and host most of the city's large-scale commercial uses. Corridors are generally four-lane automobile-oriented arterials, often divided by a median, which is in some cases landscaped. Frequent curb cuts, inconsistent setback distances, large building bulk, and large parking lots located between the street and buildings create a jarring visual break from the small scale and vegetated nature of Lodi's residential neighborhoods. Key corridors include Kettleman Lane, Cherokee Lane, Lodi Avenue, Century Boulevard, Lower Sacramento Road, Harney Lane, and Central Avenue.

The Plan strives to revitalize Kettleman Lane, Cherokee Lane, Lodi Avenue and Central Avenue by establishing them as mixed use corridors with a moderately high FAR of 1.2 which will allow slightly taller buildings and more intensity on each site. The Plan will activate the corridors with new development and re-use of existing buildings. Streets will be enlivened by locating buildings at the front of lots and parking behind, and by providing streetscape features such as trees and unified signage.

### Kettleman Lane

Kettleman Lane (State Highway 12) runs east-west through Lodi. It is the main entry point to the city at the western edge, and a major commercial street. Kettleman Lane is auto-oriented, hosting big-box retail, restaurants and fast-food establishments, offices, and few large residential complexes. Most development is located at the back of large parking lots that dominate the street. Despite bike lanes and wide sidewalks, the street lacks pedestrian or bicycle appeal. Kettleman Lane is a four-lane arterial, with a periodic median that is landscaped in a few areas, though generally not wide enough to act as a pedestrian refuge.

Proposed improvements to Kettleman Lane are illustrated in Figure 4-6. Street improvements and safe pedestrian crossing where the Woodbridge Irrigation District Canal crosses Kettleman Lane would support the proposed trail along the Canal, as described in Chapter 6: Parks, Recreation and Open Space. However, while some changes to Kettleman Lane may achieve a more aesthetically pleasing appearance and improved pedestrian and bicycle friendliness, it is envisioned to remain an essential corridor for automobile access and large scale shopping destinations.

### Cherokee Lane

Cherokee Lane, formerly State Highway 99, runs north-south through Lodi and is a major entry point for access off of SR-99. Cherokee Lane has consistent auto-oriented lighting and a landscaped median for the majority of its length, which help to make the street seem narrower than the curb-to-curb width of around 75 feet. Typical of old Highway 99, uses along Cherokee Lane are primarily auto oriented commercial, including food, motels, and automobile services and dealers. These uses reflect a variety of scales. Generally speaking, at the northern end of Cherokee Lane commercial uses are small scale and oriented to the street while the southern end is dominated by large scale car dealerships and auto-oriented commercial. The General Plan seeks to tie together the areas of disparate character into one unified corridor, as shown in Figure 4-7. The addition of streetscaping, higher intensity uses, and higher density housing interspersed along Cherokee Lane will help activate and revitalize the corridor.

### Lodi Avenue

Lodi Avenue runs east-west through Lodi. This street is narrower than Kettleman and Cherokee lanes, with a curb-to-curb width around 60 feet in the area proposed as Mixed Use Corridor. Lodi Avenue has a greater mix of uses than many of the other major corridors, including a significant amount of residential use. Commercial uses are primarily setback behind parking lots, though the scale of development is smaller than that found on Kettleman or Cherokee lanes. The Lodi Avenue Reconstruction project from Union Pacific Railroad to Cherokee Lane is in final planning stages

FIGURE 4-6: KETTLEMAN LANE

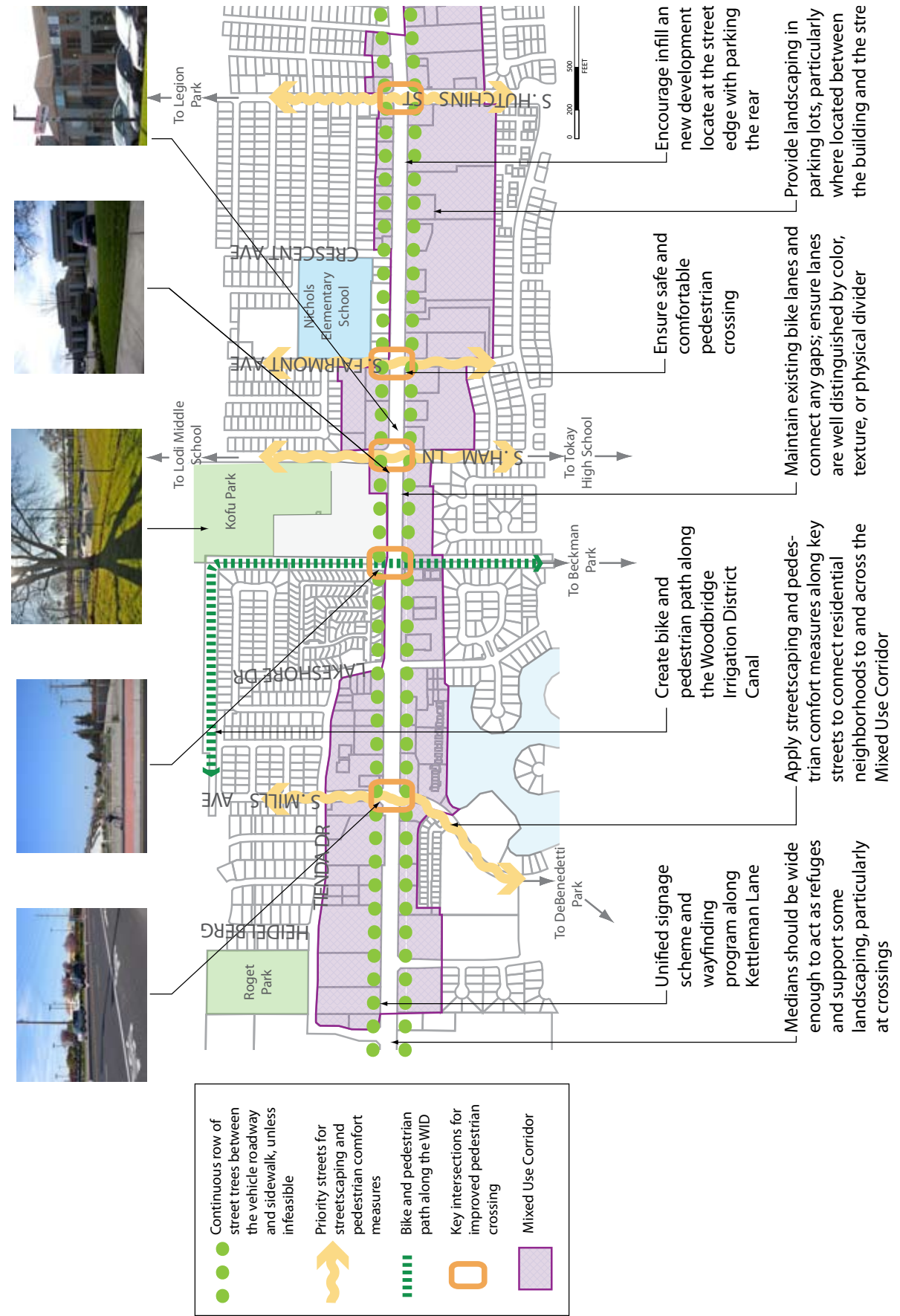
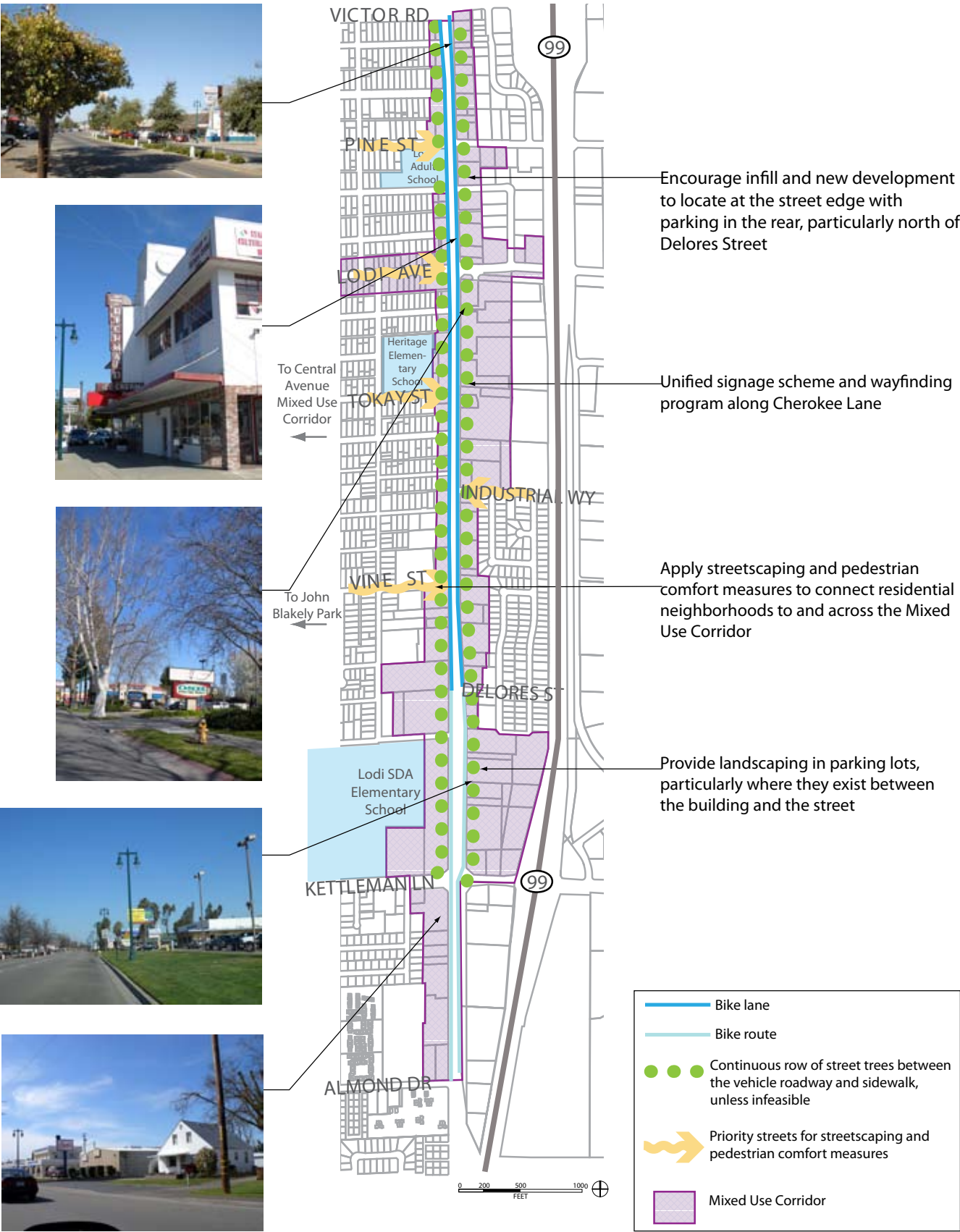


FIGURE 4-7: CHEROKEE LANE





**Ground floor active uses for a vibrant pedestrian experience**

**Mixed Use Corridor**

**Priority streets for streetscaping and pedestrian comfort measures**

**Key intersections for improved pedestrian crossing**

**Continuous row of street trees between the vehicle roadway and sidewalk, unless infeasible**

**Existing Downtown gateways**

**Intersections included in the Lodi Avenue Reconstruction Project**

**Bike route (Class III)**

**Union Pacific Railroad**

**Establish a gateway from Lodi Avenue to the Central Avenue Mixed Use Corridor and ensure safe and comfortable pedestrian crossing**

**Ensure safe and comfortable pedestrian crossing**

**Provide landscaping in parking lots, particularly where they exist between the building and the street**

**Maintain a consistent building base/streetwall along majority of site frontage along Lodi Avenue, with minimum height of 15 feet to 25 feet.**

**Apply streetscaping and pedestrian comfort measures to connect residential neighborhoods to and across the Mixed Use Corridor**

**Unified signage scheme and wayfinding program along Lodi Avenue**

**To Emerson Park**

**To Legion Park**

**Lodi High School**

**Needham Elementary School**

**Heritage Elementary School**

**S. Hamilton**

**S. Orange Ave**

**S. Crescent Ave**

**S. Rose St**

**S. Hutchins St**

**S. Church St**

**S. Washington St**

**Central Ave**

**Cherokee Lane**

**Maple Square**

**Hutchins Street Square**

**Downtown District**

**0 200 500 1000 FEET**

as of 2009. The project includes bulbouts and stamped concrete at key intersections as illustrated on Figure 4-8, decorative streetlights, and colored crosswalks, as well as landscaping, trees, benches and sidewalk artwork at various locations along Lodi Avenue. This General Plan envisions Lodi Avenue as a visually cohesive and pedestrian-friendly street with active ground floor uses, such as retail and restaurants, that are oriented toward the street.

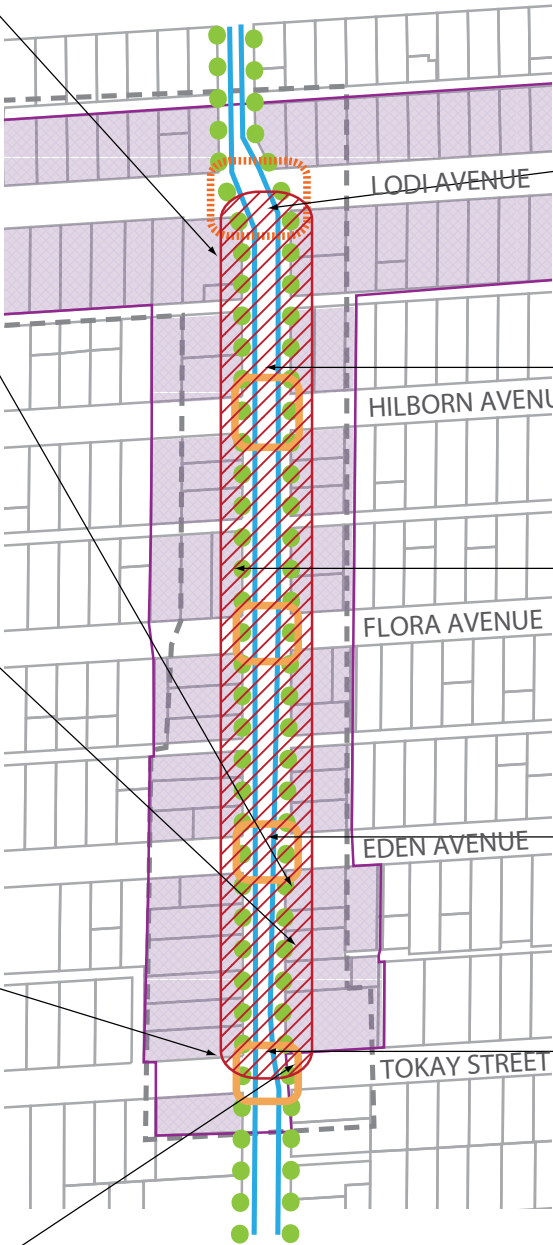
### **Central Avenue**

Central Avenue is a smaller scale mixed-use street that has been identified by community members as a model for a neighborhood commercial center. Central Avenue is a two-lane street with angled parking, street trees, pedestrian scale lighting, and a planter strip that buffers the pedestrian from the street. Retail and commercial uses are generally one story and oriented to the street. Residential uses line the blocks immediately adjacent and are interspersed on the main commercial block, reflecting a well integrated mix of uses. This setting is very pedestrian friendly and walkable while also being convenient to access by car. These factors contribute to the success of the area as a neighborhood center. General Plan improvements are illustrated in Figure 4-9.

### **Mixed Use Centers**

Mixed Use Centers will become focal points of new development as the city expands outward to the south and west. These areas will include a mix of uses, including medium- to high-density residential, office, and neighborhood commercial uses, allowing people to live and work in the same area. The Mixed Use Centers are designed to be adjacent to parks and near new schools and public facilities, to maximize accessibility. Essential components of Mixed Use Centers will be their connectivity to the existing urban form, the establishment of pedestrian and bicycle friendly streetscapes, and publicly accessible parks.

FIGURE 4-9: CENTRAL AVENUE



Establish a gateway from Lodi Avenue to the Central Avenue Mixed Use Corridor

Continue to implement the Eastside Mobility and Access Plan

Maintain a consistent building base/streetwall along majority of site frontage along Central Avenue, with minimum height of 15 feet

Unified signage scheme and wayfinding program along Central Avenue

Bulb-out with gathering space and special crosswalks at key intersections, as described in the Eastside Mobility and Access Plan



- |  |  |
|--|--|
| Ground floor active uses for a vibrant pedestrian experience                               | Priority streets for streetscaping and pedestrian comfort measures |
| Mixed Use Corridor   | Key intersections for improved pedestrian crossing                 |
| Eastside Mobility and Access Planning Area   | Intersections included in the Lodi Avenue Reconstruction Project   |
| Continuous row of street trees between the vehicle roadway and sidewalk, unless infeasible | Bike lane  |
|  | Bike route   |

## 4.5 STREETS, CONNECTIVITY, AND ACCESSIBILITY

### Street Design

Street design, landscaping, and traffic calming contribute to neighborhood identity, ensure safety, promote social interaction, and enable pedestrian and bicyclist activity. Street design elements that contribute to successful streets include provision of sidewalks, sense of enclosure, short blocks with connections to adjacent neighborhoods, and a strong building-to-street relationship. Narrow streets provide pedestrian comfort, slow traffic, and create less impervious surface. Successful wider streets require much greater attention to street trees and consideration of the pedestrian realm. Short blocks and small parcels lend themselves to walkability by creating interest and options to the walker. Trees provide multiple benefits: supplying shade, making the street more alive by their movement and richness, purifying the air and increasing the oxygen content, providing a sense of privacy, allowing contact with nature, adding character and reducing noise. Landscaping, provision of pedestrian amenities such as appropriately scaled lighting and benches, and buildings that line the street with active uses all contribute to the comfort of a street. Street design variation is shown in Figure 4-10.

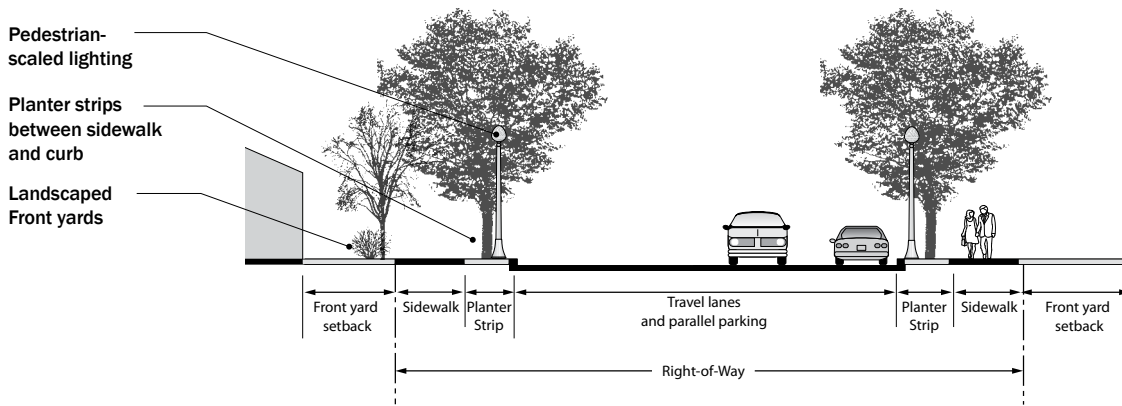


Local residential streets, local commercial streets, and corridors should all accommodate bicycles and pedestrians as well as cars.

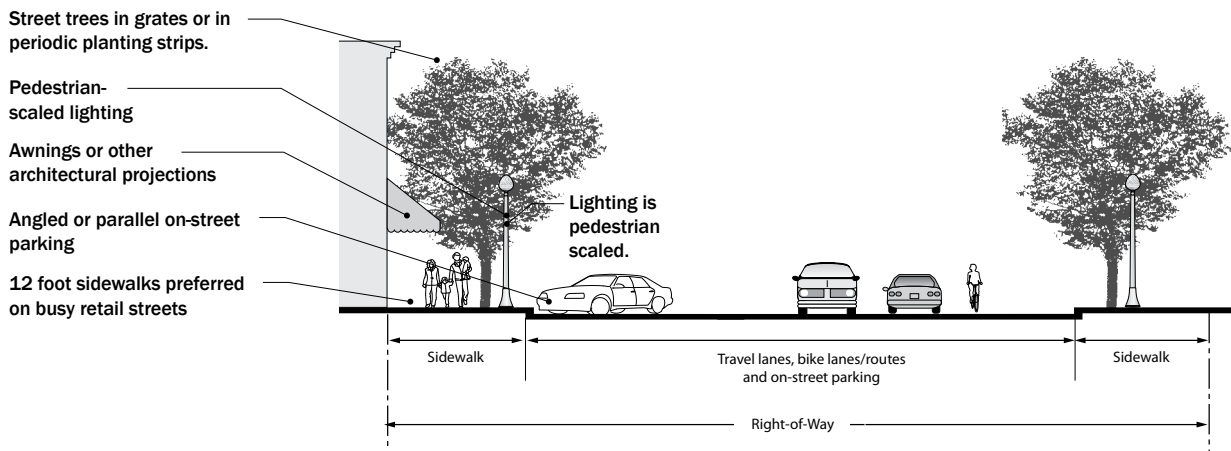


**FIGURE 4-10: STREETSCAPE**

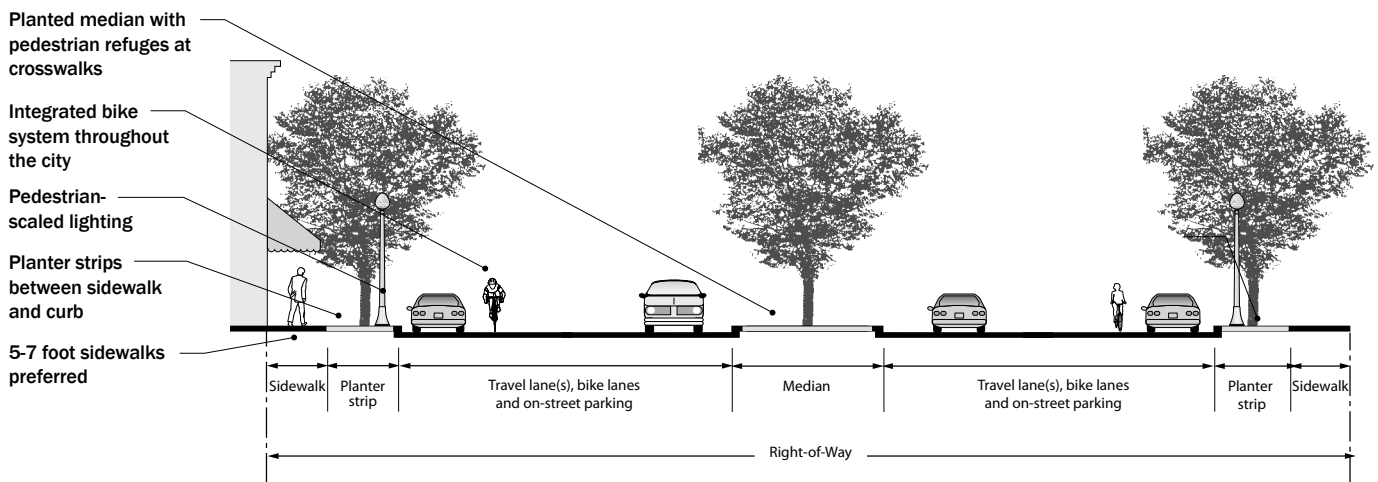
### Local Residential Street



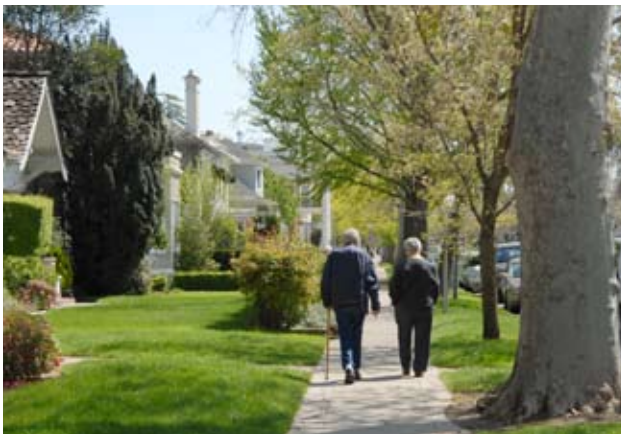
### Local Commercial Street



### Mixed Use Corridor



NOTE: These street cross sections are illustrative only. Actual roadway configurations are subject to comprehensive engineering and design.



Walkability is achieved in many contexts, including a walking trail along the WID irrigation canal, tree-lined and continuous residential streets, and sidewalks with pedestrian amenities such as special paving and benches.

## Walkability

“Walkability” is the extent to which the built environment supports and encourages walking by providing for pedestrian comfort, safety, and choice. Like bicycling, walking is a sustainable mode of transport that reduces congestion, conserves energy and does not contribute to air or noise pollution. Beyond its utilitarian value for trips to work, school, or shopping, it can be recreational and improve health.

Overall, Lodi is highly walkable, particularly in central Lodi, downtown, and in small commercial areas such as Central Avenue. In some neighborhoods, however, factors such as lack of sidewalks, street trees, or connectivity degrade walkability. Several elements impact walkability, including:

**Path connectivity:** A successful path network is well-connected, with a high density of intersections and small block sizes. Connectivity is best addressed when an area is being planned and is far more difficult and expensive to remedy once a place is built, indicating the importance of connectivity in new residential and commercial development. In some cases, connectivity retrofits might be possible, such as by connecting cul-de-sacs with walkways to provide a continuous bicycle and pedestrian system. Other retrofits, such as providing pedestrian overpasses or underpasses, are likely to be too costly to pursue.

- **Linkage of Movement Systems:** A successful pedestrian path is linked seamlessly with other modes, particularly to public transit, thereby minimizing automobile dependence. Providing continuity from home to various destinations requires a pedestrian network that is well supported by transit and situated within an accessible mix of land uses.
- **Fine Grained Land Use Patterns:** A walkable neighborhood or city has an accessible pattern of activities to serve daily needs, such as access to a park, school, library, and/or market on foot within 10 to 20 minutes. Like path connectivity, land use intensity and diversity are best established at the very beginning of the development process since once a low-density and coarse-grained pattern is put in place, it is a legal and physical challenge to insert density and variety.

- **Safety:** The pedestrian network needs to be safe for people of all ages and degrees of mobility, both from traffic hazards and crime. On appropriate streets, traffic calming techniques—whereby vehicular traffic is slowed through a variety of devices such as chokers, speed bumps, raised crosswalks, rough paving, roundabouts, or landscaping—are one approach to making streets more pedestrian friendly and safer. To address safety from crime, paths intended for use after dark require appropriate lighting. Walkers are most comfortable with street level lighting only bright enough to illuminate faces, pavement obstacles and level changes.
- **Path Context:** Many aspects of the path context can contribute to a positive walking experience, including visual interest of the built environment, design of the street as a whole, transparency of fronting structures, visible activity, views, lighting, street trees, and other landscape elements.
- **Path Quality:** Successful paths are continuous and have relatively smooth surfaces to ensure ease of walking and wheelchair access. The required width varies based on need, ranging from single-file trails, or sidewalks that allow two to three people to pass, to broad walkways. Landscape elements such as planting strips between the sidewalk and street help insulate the pedestrian from the moving traffic, and street trees provide protection from the sun and help define the street space. Additional carefully placed amenities and the addition of paving patterns add visual interest and contribute to city identity.

## Connections/Connectivity

Strengthening connections between neighborhoods, local centers, public spaces, regional parks, and the downtown shopping area is an important step to improving livability. Neighborhoods can be assessed by their internal and external connectivity as described below.

### Internal Connectivity

Internal connectivity describes how easy it is to get from point to point within a relatively small defined

area. Connectivity is enhanced by through-streets and a higher number of intersections, which translate to greater availability of options for travel within the neighborhood and to and from the neighborhood. Through-streets are most common in the downtown and older areas such as Old Lodi and the Eastside. While a higher number of intersections increase connectivity, a lower number of intersections can focus traffic on higher capacity collector streets, reducing options for travel through neighborhoods and increasing the amount of through traffic on some streets. Spacing of intersections is important in order to avoid overly frequent intersections which may impede traffic flow and overly long blocks, which may lengthen travel time and distance.

### External Connectivity

External connectivity is how well an area can access, and be accessed by the city's street network, land uses, residents, and visitors. While three-way intersections provide neighborhood access to the citywide street network, a neighborhood wholly linked to surrounding arterials by three-way intersections is like an island within the city with no other neighborhood directly connected to it. In comparison, four-way intersections allow people to travel freely between neighborhoods. These connections are important because they permit the shortest routes between destinations, thereby enabling walking and biking.

The older grid-based neighborhoods of downtown, Old Lodi, and the Eastside have the greatest number of access points and are the most inter-connected—it is easy to travel from one location to another and neighborhoods link easily into one another. The areas immediately outside of these neighborhoods see a drop-off in the frequency of four-way connections but still have many three-way intersections, so at least these neighborhoods can easily access the wider city. Beyond these neighborhoods, such as areas west of Ham Lane or south of Kettleman Street, access points are less frequent, in some cases with only two or three occurring every half mile. As a result, the neighborhoods in these areas function as islands, separated from the rest of the city and impeding easy connections between adjacent areas.

## Accessibility

Another fundamental measure of neighborhood livability is ease of access, especially by foot, bicycle, stroller, and wheelchair to key elements of the neighborhood such as schools, parks, local shops and services, cultural facilities, libraries, or transit stops. Accessibility is about how easy it is to reach and use important functions of everyday life and key cultural and social resources. It is driven by the quality, convenience, and effectiveness of connections by different modes of transportation. This in turn is affected by allowable densities, distances between different land uses, the grain of the street network, locations of public services, and expenditure on non-motorized modes of travel such as bike lanes and sidewalks. The layout of the street pattern facilitates or discourages access, especially for pedestrians and bicyclists. When housing, jobs, services, parks, and schools are great distances from one another and are connected by roads that lack bike lanes or sidewalks, cars become a necessity for almost all trips, leading to high levels of traffic, air pollution, and low quality of life for those who cannot drive.

### Schools and Parks

The livability of a city is shaped by how easy it is to access essential resources and services. Parks and schools are two of the most important public services for livability; having good accessibility to these services is crucial. Currently, Lodi's network of parks and schools are generally well-distributed around the city. A majority of residential land in Lodi is within a five minute walk of a park or school. While a substantial portion of southwest Lodi lacks parks or schools, two parks proposed for the area would remedy that gap in coverage and would significantly increase the proportion of residential land served. New parks and schools are proposed as integral components of new development around the mixed use centers, located a quick walk, bike ride, or drive from many homes. Further detail on parks can be found in Chapter 6: Parks, Recreation and Open Space.

### Jobs and Services

Ready access to employment, stores, and services is another crucial component of livability. Quick commutes and the ability to easily run errands and make household

purchases frees up time for personal activities, reduces the cost of everyday transportation, lowers the amount of traffic congestion, and limits the emission of greenhouse gases. In Lodi, most services are concentrated in a few areas, including downtown, along Kettleman Lane, Fairmont Avenue, Lodi Avenue, and Cherokee Lane and in pockets at major intersections on Ham Lane, Lockeford Street, Hutchins Street, and Lower Sacramento Road. This linear distribution along roads often requires access by car to move from one business to another, increasing time and traffic congestion. In comparison, clusters of services allow users to park at a single location for a longer period of time. Clustered development can only be found in downtown, at the intersection of Central and Lodi avenues, and at the intersection of Kettleman Lane and Lower Sacramento Road.

Overall, the varied location, form, and uses of the city's non-residential areas provide a number of options to residents and often provide a mix of jobs and services in the same area. In particular, jobs and services along Kettleman Lane and Lodi Avenue are well positioned for accessibility—residential uses are located to their immediate north and south, and the streets have capacity for high amounts of traffic. On the other hand, residents along the southern edge of Lodi appear to lack neighborhood stores and instead have longer trips to large shopping centers on Ham Lane and Lower Sacramento Road.

### Improving Accessibility

New concentrations of jobs and services will be in Mixed Use Centers and in the southeast. These nodes of employment will require effective transit access and pedestrian and bicycle connections. The Mixed Use Centers aim to improve accessibility by locating housing, jobs, and services in close proximity. Extensions of the street grid are envisioned in the plan as grids that ensure direct connections to the existing network. Additional connections to residential areas through a trail or path system of linear parks would also improve accessibility. For instance, linear parks could be used to connect housing south of Kettleman Lane with amenities to the north.



## 4.6 SITE PLANNING AND GREEN BUILDING

The General Plan approaches sustainability at multiple scales, woven throughout the plan in various chapters. One approach is through establishing the city in a compact and efficient framework, thereby reducing the impact on surrounding land and making use of existing infrastructure. Another is by promoting pedestrian- and bicycle-friendly streets. This section identifies how to ensure that new development and renovations minimize use of resources and impact on the environment through site planning and green building.

### Site Planning

Site planning is an essential component in reducing the overall impact of a development. Sustainable site planning begins with consideration of surrounding uses and access to transit to maximize connectivity with key public uses, services, and employment. Once the site is established, sustainable site planning practices—sometimes also referred to as Low-Impact Design—are employed to maintain or restore the natural hydrologic functions on a site. The goal is to structure the development of a site—through arrangements of buildings, roads, parking areas, site features and storm water management plans—to detain, filter, treat, and reduce runoff, as well as reduce urban heat island impacts. By reducing water pollution and increasing groundwater recharge, sustainable site design helps improve the quality of receiving surface waters and stabilize the flow rates of nearby streams, potentially minimizing flooding impacts and benefiting wildlife habitats.<sup>1</sup>

### Green Building and Construction

Green building is a term used to describe a structure that is designed, built, renovated, operated or reused in a sustainable and resource-efficient manner. It encompasses the environmental, economic, and social impacts of buildings, including energy efficiency, water conservation, indoor environmental quality, use of recycled and renewable materials, and site planning. Green

construction refers to the building demolition and construction processes, including the fuels and energy used in construction equipment and vehicles; the waste generated at construction sites; and runoff, water quality, and air quality impacts associated with the construction phase of the project. The Plan strives to improve construction and demolition practices to reduce waste and energy consumption. The result is a more environmentally sustainable building that also enhances the health and productivity of its occupants while saving money and resources.

Several green building programs have developed in response to a growing movement by local governments and other community interests to address environmental and economic sustainability through an integrated design approach. The LEED (Leadership in Energy and Environmental Design) system developed by the U.S. Green Building Council has developed several sets of design standards that apply to both building and site design. In addition to LEED, many California cities and counties have adopted their own sustainable design guidelines or programs, many of which are based upon the California-based Build It Green GreenPoint rating system. These programs can serve as a foundation for the City of Lodi and either be adopted or incorporated into future guidelines. Strategies that are common throughout the design and practice of green building are focused on flexibility and creativity during the design process.

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<sup>1</sup> Modified and adapted from [www.wbdg.org](http://www.wbdg.org)

## 4.7 POLICIES

### GUIDING POLICIES

- CD-G1** Enhance Lodi's identity and livability by maintaining a compact urban form, with clear edges and delineation between urban and rural uses.
- CD-G2** Promote downtown as the symbolic center of the city, with a greater mix of uses, and building types, and an expanded extent that embraces the Eastside. Promote downtown as a tourist destination.
- CD-G3** Respect and maintain Lodi's small-town character, its existing neighborhoods, the historic downtown, and historic buildings.
- CD-G4** Structure new neighborhoods to promote walkability, and ensure they are integrated with the surrounding urban fabric.
- CD-G5** Foster a well connected street network that enhances accessibility to jobs, services, parks, schools, and shopping, particularly at the scale of pedestrians and bicyclists.
- CD-G6** Foster redevelopment of key corridors as vital spines, with nodes of mixed-use, higher intensity, pedestrian- and bicycle-friendly development.
- CD-G7** Promote a mix of uses, densities, and building typologies in new development.
- CD-G8** Promote sustainable development practices and conservation of resources to reduce environmental impact and ensure long-term sustainability.
- CD-G9** Encourage green building and construction in new development and renovations

### IMPLEMENTING POLICIES

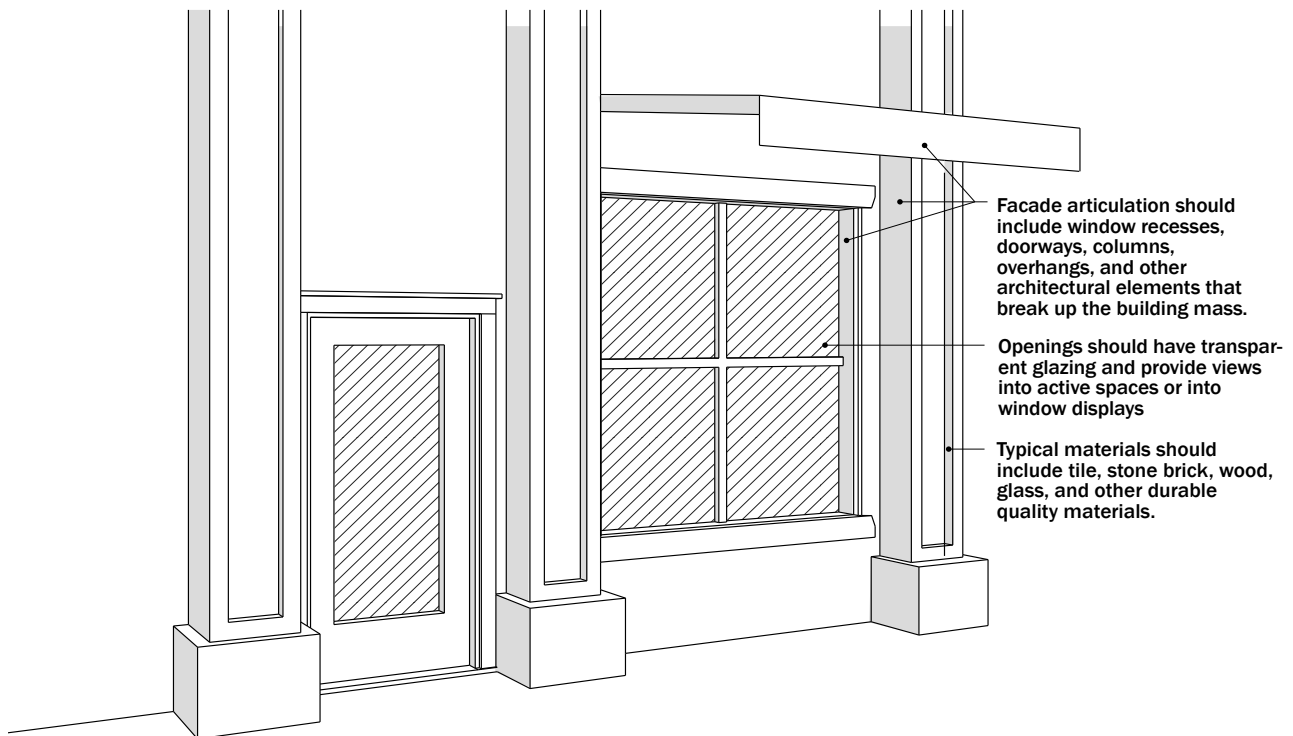
#### Citywide Policies

- CD-P1** Incentivize infill housing—within the Downtown Mixed Use district and along Mixed Use Corridors—through the development review, permitting and fee processes.
- CD-P2** Ensure that Zoning and Subdivision ordinances include measures that guide infill development to be compatible with the scale, character and identity of adjacent development.

**CD-P3** Ensure that the Zoning Ordinance includes measures to promote fine-grain development along retail and mixed-use streets, using horizontal and vertical building articulation that engages pedestrians and breaks up building mass.

**CD-P4** Ensure that the Zoning Ordinance includes measures to promote durable and high quality building materials and high standards of construction for longevity and reduced maintenance costs over time, especially for buildings in high-pedestrian activity areas, such as downtown, along Mixed Use Corridors, and in Mixed Use Centers.

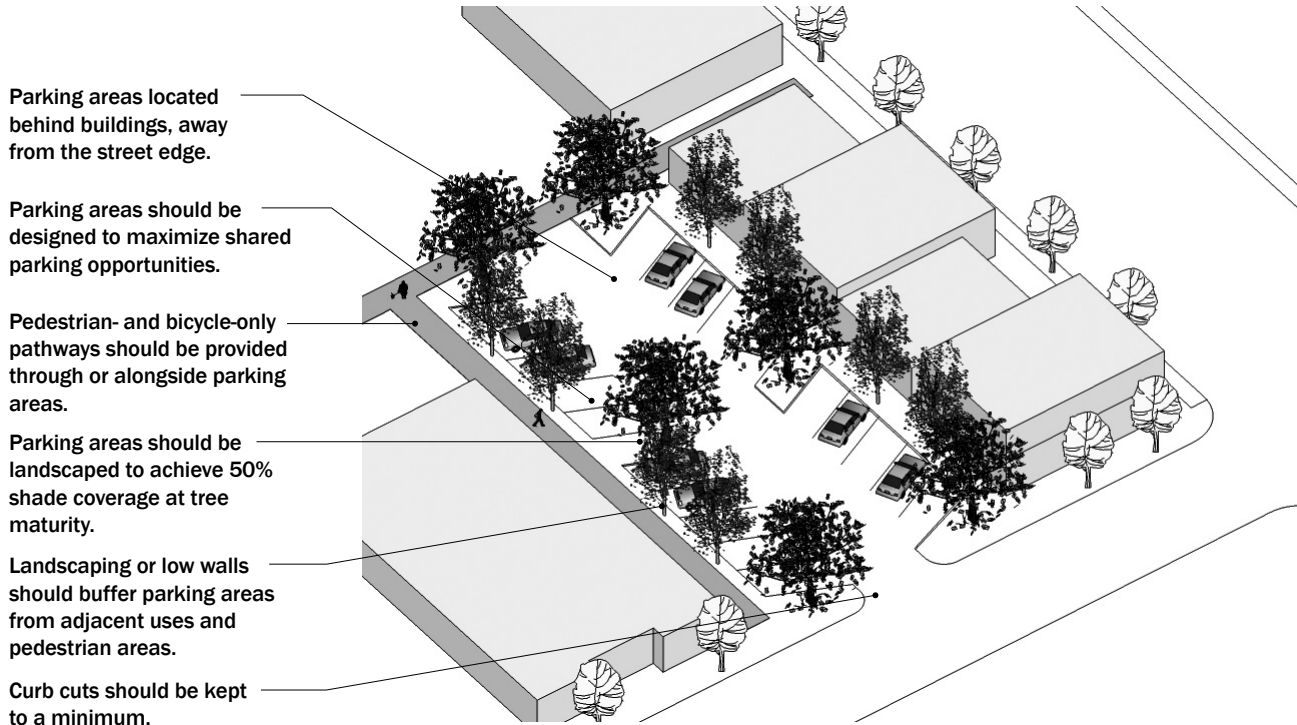
## BUILDING ARTICULATION



**CD-P5** Configure parking areas to balance a vital pedestrian environment with automobile convenience. Parking areas should be:

- Located in locations less visible from the sidewalk—behind buildings and away from the street edge, especially along Mixed Use Corridors and Centers, and principal downtown streets. Where a lot faces two streets, parking lots should be accessible by side road.
- Sized and located to take advantage of shared parking opportunities.
- Accommodating to pedestrians and bicycle traffic with pedestrian-only pathways through parking areas.
- Landscaped to achieve fifty percent (50%) shade coverage at tree maturity. Architectural elements such as trellises and awnings may also contribute to shade coverage.
- Buffered from adjacent uses and pedestrians through the use of low walls and hedges.

## PARKING



Public parking lot in downtown allows shared parking.



Public parking garage in downtown reduces the need for surface lots and curb cuts.



## Downtown

**CD-P6** Update downtown regulations in the Zoning Ordinance:

- Establish a Downtown District to encompass the area shown as Downtown Mixed Use in the Land Use Diagram (Chapter 2, Figure 2-1).
- Require active uses—such as retail, eating and drinking establishments—at the ground level for the area shown in Figure 4-5.
- Update allowable uses to permit residential uses on upper levels on all streets in downtown.

**CD-P7** Extend downtown streetscape treatment to embrace the entire area where ground-level retail is required, especially streetscape treatment for streets east of the railroad in the Downtown Mixed Use district. The elements should be consistent with the existing downtown streetscape, but should identify the eastern section as a unique area within downtown.

**CD-P8** Require active uses or pedestrian oriented design in alleyways located in the downtown area to establish retail and pedestrian connections, particularly where alleyways connect retail streets (such as between School Street and Sacramento Street) or retail to parking (such as between School Street and Church Street).

Other pedestrian oriented design may include pedestrian only walkways, high quality paving, landscaping, lighting, seating, or other similar features.

**CD-P9** Continue to use the Eastside Mobility and Access Plan as a means of connecting downtown and the Eastside neighborhood.

**CD-P10** Incentivize rehabilitation and adaptive reuse of buildings, especially east of the railroad, particularly on Main and Stockton streets in the Downtown Mixed Use district, through development review, permitting and fee processes.



Pedestrian friendly alley in downtown connecting to parking in rear.



Pedestrian friendly alley in downtown.

## Mixed Use Corridors

**CD-P11** Establish development standards in the Zoning Ordinance for Mixed Use Corridors that create a pedestrian-scaled environment:

- Require a minimum percentage of the frontage of sites along Lodi and Central avenues to be devoted to active uses. Ensure that depth and height of the provided space is adequate to accommodate a variety of tenants and provide flexibility for the future.
- Maintain a consistent building base/street-wall along majority of site frontage along all Mixed Use Corridors except Kettleman and Cherokee lanes, with minimum height ranging from 15 to 25 feet, depending on the scale and character of the corridor, with taller streetwall along wider corridors.
- Along Sacramento Street, and Lodi and Central avenues, require new development to be built to the street edge, with parking located in the rear.
- Require buildings to be finely articulated and visually engaging.
- For properties located at key intersections—in particular the intersections of Lodi Avenue and Central Avenue, Lodi Avenue and School Street, and Lodi Avenue and Sacramento Street—require appropriate design features, including: buildings that punctuate the corner with design elements and/or projects that provide additional public or pedestrian amenities (such as the inclusion of plazas).

**CD-P12** Provide incentives, through the development review, permitting and fee processes, to redevelop underutilized commercial properties located within the Mixed Use Corridors.

**CD-P13** To provide development flexibility, consider incorporating overall development intensity measures (such as floor area ratio) for all non-residential and residential uses, rather than regulating density/intensity separately.

**CD-P14** Minimize pavement widths (curb-to-curb) along Mixed Use Corridors to prioritize pedestrian and bicycle movement, while

ensuring adequate street width for traffic flow.

**CD-P15** Improve or maintain streetscapes, along Mixed Use Corridors. Streetscape improvements could be implemented through a city streetscape program. Amenities may include:

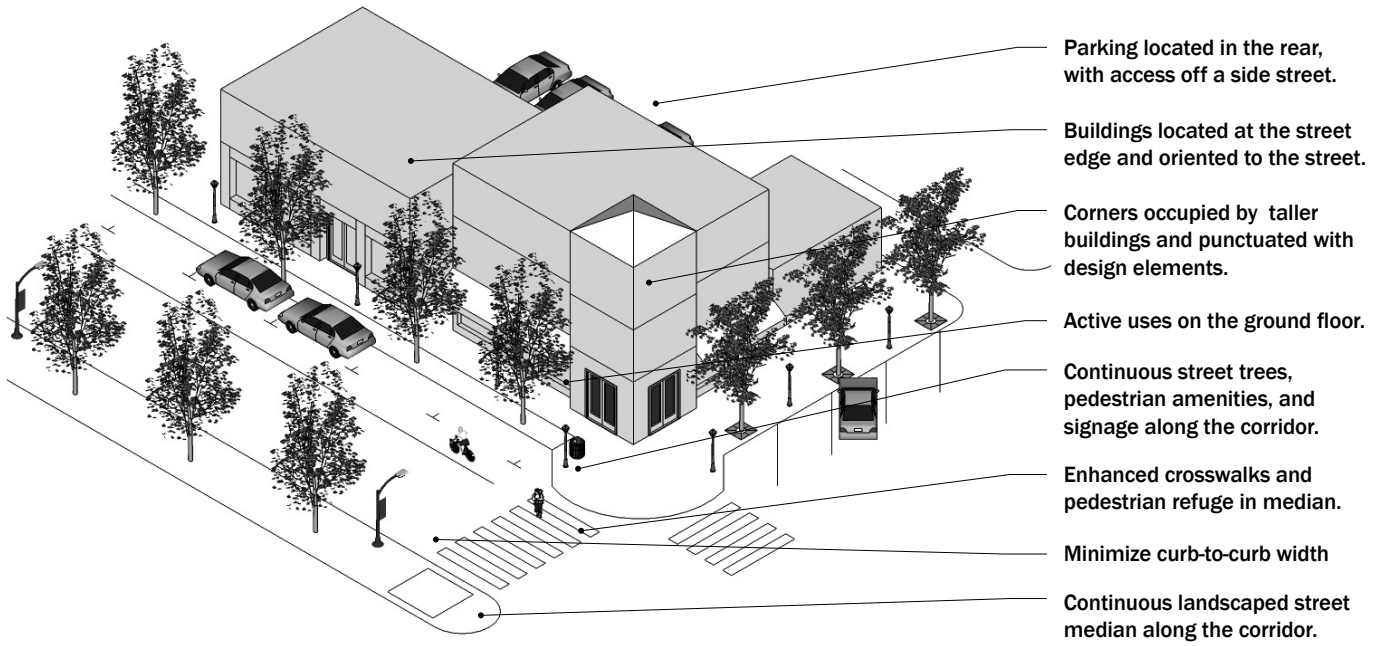
- Street trees
- Wide sidewalks
- Special paving
- Street lighting
- Seating
- Info kiosks, particularly in the downtown area
- Open bus stop shelters
- Bicycle racks

**CD-P16** Provide continuous street trees along the curb, between the vehicle roadway and the sidewalk, unless this is physically impossible due to constraints such as underground utility lines. Minimize curb cuts to emphasize continuous unbroken curb lengths.

**CD-P17** Develop a wayfinding and signage scheme along the city's major corridors and streets that utilizes public art and street elements, such as banners and light fixtures. The scheme should reinforce the City's identity and linkages to downtown. Include Kettleman Lane, Lodi Avenue, Cherokee Lane, Sacramento Street, Central Avenue, and Stockton Street in the wayfinding scheme.

**CD-P18** Require active uses at the ground floor on Lodi and Central avenues within their Mixed Use Corridor designations, as noted shown in Figures 4-8 and 4-9, respectively.

## MIXED USE CORRIDOR



## Streets, Connectivity, and Accessibility

*Refer to Chapter 5: Transportation for policies related to transportation infrastructure, including for pedestrians and bicycles.*

- CD-P19** Develop requirements for street trees in all new growth areas that maximize shade to minimize urban heat island impacts.

Require all subdivisions in new growth areas to prepare a street plan demonstrating maximum connection to existing streets, specifically incorporating streets shown in Figure 4-4 and intermediate street connections. Ensure that new development on the west side enables expansion of the street grid for future growth, beyond this General Plan horizon.

Existing and emerging development at the City's edges has not been designed to enable future extensions, producing disconnected neighborhoods.

- CD-P20** Prohibit gated development, and avoid cul-de-sacs. Where cul-de-sacs are provided, require pedestrian and bicycle connection at the terminus of the cul-de-sac to adjacent street.

- CD-P21** Limit maximum block lengths in new neighborhoods to 600 feet, with pedestrian/bicycle connection no more than 400 feet apart (where resulting from connection at end of cul-de-sac), and 400 feet between through streets along Neighborhood Mixed Use Centers.

- CD-P22** Encourage alternatives to soundwalls and permit new soundwalls only where alternatives are not feasible, such as along Highway 99 and the railroad tracks.

While soundwalls can limit sound to development immediately adjacent to traffic, much of the sound is simply reflected to development further away, resulting in increase in ambient noise levels. Moreover, soundwalls are disruptive to neighborhood character and connectivity. Alternative designs could include frontage roads, dense vegetation, and ensuring sufficient insulation in residential units that would potentially be impacted by the noise.

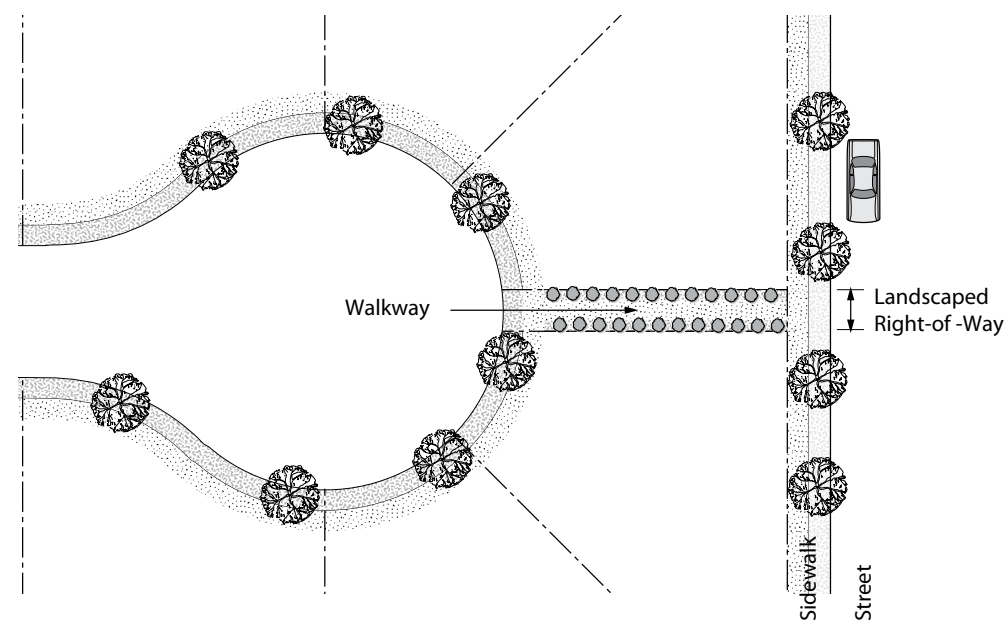
- CD-P23** Create smooth transitions between neighborhoods and across the railroad with pedestrian paths and/or uniform streetscape design.

- CD-P24** Use bike lanes, trails, or linear parks to improve connectivity throughout the city and in particular between housing located south of Kettleman and amenities located north of Kettleman, as shown in Figure 4-7. These pathways should employ easy and safe crossings and connect to destinations such as downtown, shopping centers, parks, and/or schools.

- CD-P25** Increase public art throughout Lodi. Encourage the placement of art in locations that are interactive and accessible to the public. Develop a funding strategy to ensure adequate support of arts and cultural programs.



**CUL-DE-SAC CONNECTION**



Cul-de-sac connections can increase connectivity for pedestrians and bicycles.



Lush street trees provide shade and minimize urban heat island impacts.

## New Residential Neighborhoods

**CD-P26** Focus new growth, which is not accommodated through infill development of existing neighborhoods, in easily-accessible and pedestrian friendly neighborhoods that include neighborhood-oriented commercial, public services such as schools and parks, and residential uses.

**CD-P27** Require new development to connect with nearby uses and neighborhoods; include paths to connect to the rest of the city; exhibit architectural variety and visual interest; conform to scale requirements; and relate housing to public streets.

**CD-P28** Minimize the visual impact of automobiles in residential areas.

Methods include reducing garage frontage, minimizing curb cuts, setting garages and parking areas back from houses, locating garages at rear or along alleyways, and providing narrow roads.

## Mixed Use Centers

**CD-P29** Require all development at sites designated Mixed Use Center to provide a mix of commercial uses, while allowing residential uses, to create a “node,” typically centered around a plaza, or “a main street,” with a minimum of 10 percent (10%) of the land area devoted to non-residential land uses, to create pedestrian vitality in the core area. Allow a range of other supportive commercial uses, such as medical, dental, and real-estate offices, as well as community facilities.

**CD-P30** Require each core to have at least one plaza or other satisfactory gathering space along the main street that enables gathering and promotes a sense of neighborhood identity.

**CD-P31** Integrate new Mixed Use Centers into the city’s existing fabric and proposed new development. Provide a network of streets and connections that expands circulation opportunities for pedestrians and bicyclists

and ensures connections by multiple modes between the new centers, and existing neighborhoods.

Update Subdivision ordinance to require:

- Master plans for new development that show publicly accessible parks, and a connected street grid.
- Blocks that do not exceed 600 feet in length unless additional pedestrian connections or public space is included.
- Street trees on public streets.
- Sidewalks on public streets.

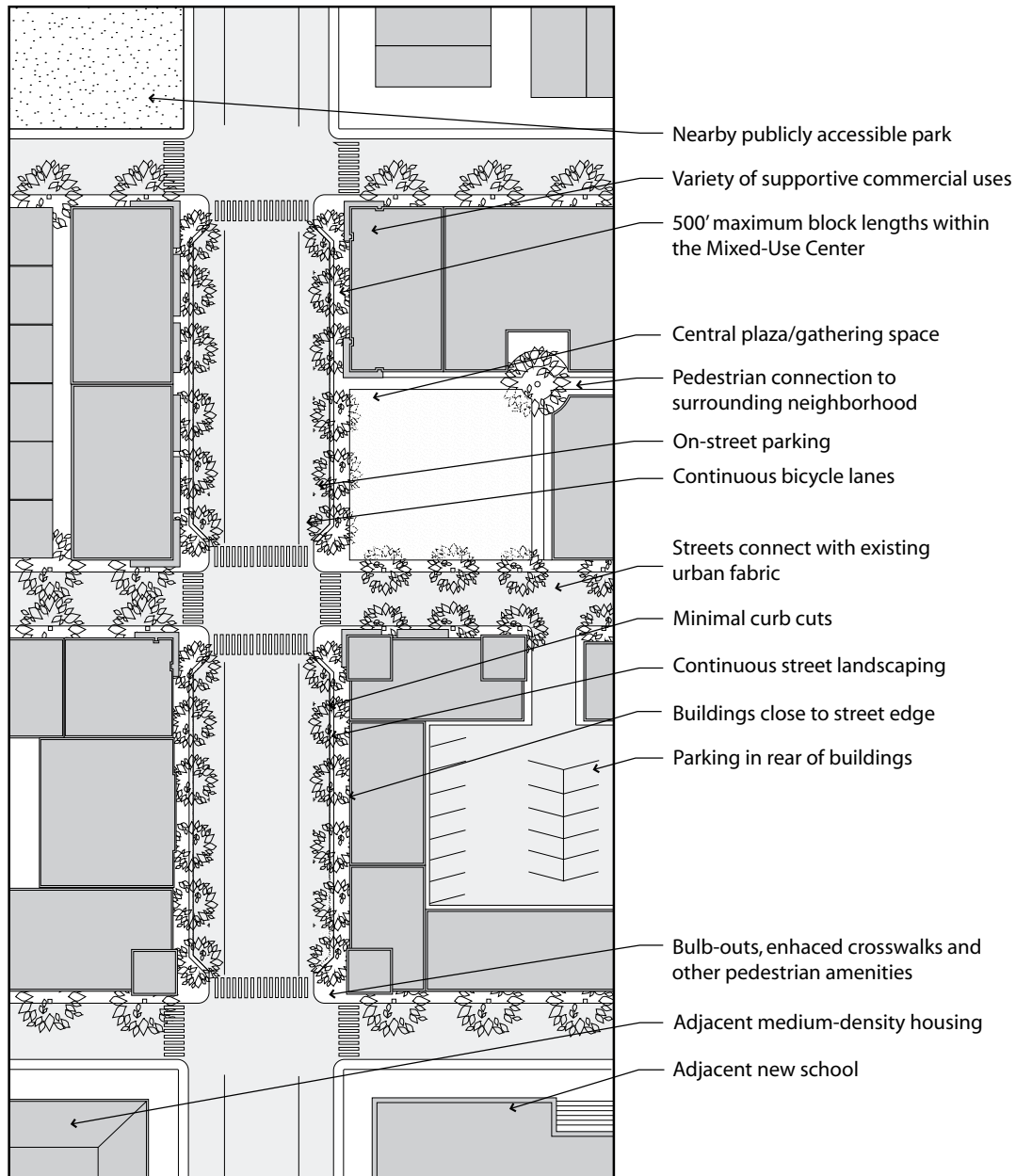
**CD-P32** In order to use less energy and reduce light pollution, ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent residential neighborhoods and/or natural areas at a level greater than one foot candle above ambient conditions.

**CD-P33** Require that any office uses in Mixed Use Centers front along the street edge with minimal setbacks; locate parking in the rear or underground; provide plazas and other open space amenities for employees; provide street landscaping; and provide pedestrian connections where appropriate.

**CD-P34** Minimize curb cuts to expand pedestrian space and increase the supply of curbside parking.

Methods include requiring abutting new developments to share a single access point from the road and allowing only one curb cut per parcel.

## MIXED USE CENTER



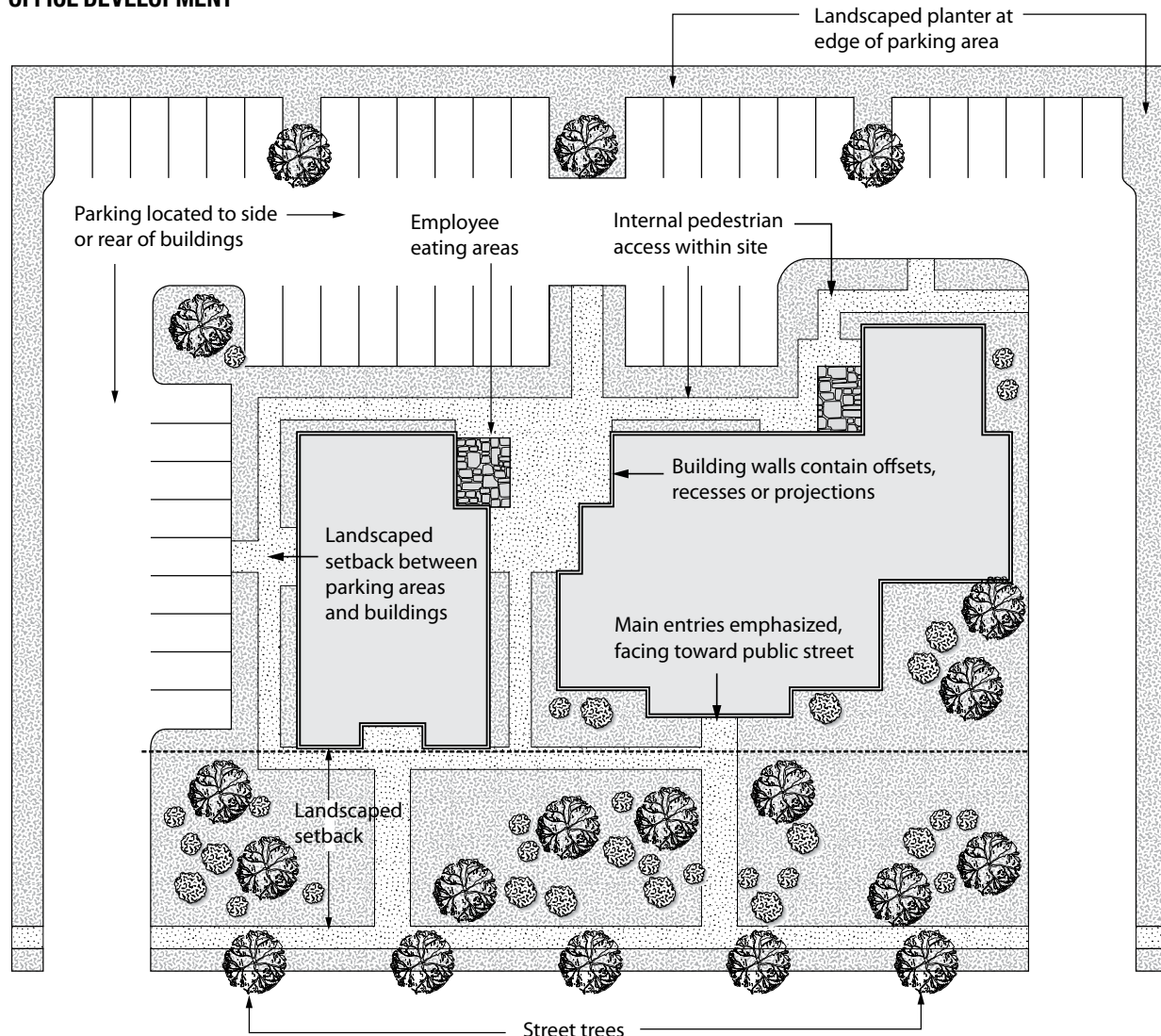
## New Office Development

**CD-P35** Require new office development to be designed to address not just automobile access, but also potential for transit access, and allowing lunchtime pedestrian access to adjacent uses. Locate new office development along the street edge, with the main entrance facing the street. Parking should not be located between the street and building.

**CD-P36** Include pedestrian paths that provide internal access on all site plans. Pedestrian paths should access the sidewalk, main building entrances, and parking areas.

**CD-P37** Provide landscaped setbacks between all parking areas and buildings, and at the edges of parking areas.

### OFFICE DEVELOPMENT





## Site Planning and Green Building

Refer to Chapter 7: Conservation for related energy and climate change policies and Chapter 8: Safety for related stormwater management policies.

**CD-P38** Promote location and siting of buildings that minimizes energy use by features such as enhancing use of daylight, minimizing summer solar gain, and use of ventilating breezes.

**CD-P39** Design any City-owned buildings or City-owned buildings that are proposed for new construction, major renovation to meet the standards set by LEED™ or equivalent.

**CD-P40** Prepare, or incorporate by reference, and implement green building and construction guidelines and/or standards, appropriate to the Lodi context, to ensure high level of energy efficiency and reduction of environmental impacts associated with construction and operations of buildings. Ensure that these guidelines/standards:

- Require documentation demonstrating that building designs meet minimum performance targets, but allow flexibility in the methods used.
- Exceed California's 2005 Title 24 regulation standards for building energy efficiency, if feasible.
- Reduce resource or environmental impacts, using cost-effective and well-proven design and construction strategies.
- Reduce waste and energy consumption during demolition and construction.
- Identify street standards, such as street tree requirements, appropriate landscaping practices, and acceptable materials.
- Incorporate sustainable maintenance standards and procedures.
- Promote incorporation of energy conservation and weatherization features in existing structures.

These guidelines could be developed directly from the LEED (Leadership in Energy and Environmental Design) system developed by the U.S. Green Building Council, the California-based Build It Green GreenPoint rating system, or an equivalent green building program.

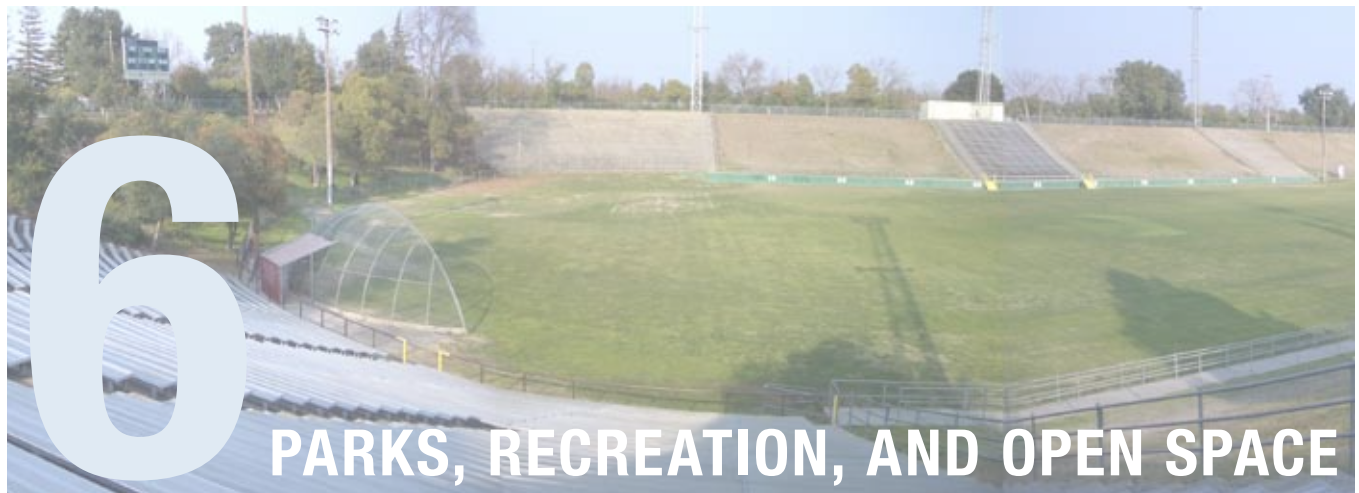


Solar photovoltaic system in a residential setting.



Permeable pavement design.

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Parks and open spaces provide opportunities for recreation, relaxation, informal sports, walking, or simply a break from the stresses of everyday life. They also serve as gathering places where community members can meet, informally or for planned activities. These activities need to be supported with an adequate supply of accessible and appropriately developed space. The city should have parks with a distribution and form that allows them to be enjoyed by workers during the day, used by children and the elderly close to their homes, and to serve as a point of focus for residential neighborhoods.

The General Plan builds on Lodi's existing parks and recreation facilities, ensuring that community members will continue to enjoy park and recreation services. This Element provides background on the city's existing parks, open space, and recreation facilities; describes planned improvements; and outlines policies and standards to ensure a continued high level of service as the city grows.

## 6.1 EXISTING PARKS, RECREATION, AND OPEN SPACE SYSTEM

This section presents a summary of the existing conditions of Lodi's parks, recreational programs, recreational facilities, and open space areas. The Lodi Department of Parks and Recreation serves not just residents of the City of Lodi, but also non-residents living in the Lodi Unified School District service area north of eight Mile Road. Currently (2009), Lodi has 23 developed and five undeveloped parks and open spaces. Table 6-1 details the type and breakdown of park and basin acres for each of the existing parks and open spaces. As the table shows, basins play a large role in the provision of parks and open spaces, accounting for 34% of all parkland. Figure 6-1 illustrates the City's existing, planned, and proposed parks and open spaces.

A comprehensive Park, Recreation, and Open Space Plan was adopted in 1994, providing a detailed study, plan, and implementation strategy for parks and open space in Lodi. The General Plan builds from the standards and park types defined in this plan.

### Park Types

#### Mini/Urban Parks

Mini/Urban parks include tot lots, children's playgrounds, and other small single purpose play lots designed primarily for very young children. Due to their small size, facilities are usually limited to a small open grass area, a children's playground, and occasional picnic site. Mini/Urban parks are typically located in areas that are fully developed and vacant land is scarce. There is only one mini-park in Lodi.

#### Neighborhood Parks

Neighborhood Parks include playgrounds and parkland primarily designed for non-supervised and non-organized recreation, and as passive open space. In addition to grassy area, recreation facilities may include ball fields, basketball courts, dog areas, playgrounds, soccer fields, swimming pools, and meeting rooms. Ideally, neighbor-



Emerson Park (top), Blake Park (middle), and Hale Park (bottom) provide recreation and open space facilities for local neighborhoods.



hood parks serve a ½-mile radius area. Currently, there are 14 neighborhood parks in Lodi.

### Community Parks

Community parks serve a larger segment of the population, and are primarily designed for active and structured recreation for both children and adults. While individual and family activities are encouraged, community parks are a main channel for organized activities and sports. In addition, all or a large portion of land in these parks also function as detention basin during rainy seasons. These parks have a service area of one to two-mile radius and range from 10 to 26 acres in size. There are currently two community parks in the city—Kofu and Salas—providing ball fields, basketball courts, dog areas, playgrounds, picnic areas, meeting rooms, skateboard park, in-line hockey and tennis court facilities.

### Regional Parks

The Lodi Lake Park is the only regional park within Lodi's City limits. A regional park serves the entire region, attracting visitors far beyond the boundaries of the city. Typically exceeding 100 acres in size, regional parks feature a wide range of activities and facilities. The 43-acre Lodi Lake Park is characterized by the Mokelumne River, swimming, beaches, and large picnic areas. It is also attached to the Lodi Lake Wilderness Area. A proposed expansion of the park, planned on the Lodi Lake West Bank Area, will add approximately eight acres to the regional park (five additional acres have been designated for the surface water treatment facility).

### Natural Open Space

The Lodi Lake Wilderness Area is the only natural open space within City limits. Natural open space is undeveloped land primarily left in its natural environment with recreation uses as a secondary objective. The Lodi Lake Wilderness Area spans 58 acres, including 25 acres of lake area. Located adjacent to Lodi Lake Park, this site was intended to preserve the riparian and natural open space along the Mokelumne River. This open space also provides 2.3 miles of paved and unpaved trails.



Lodi Lake Park and Wilderness Area serve a regional population and provide access to a natural open space.



Kofu Park is a community park with amenities that serve a larger area.

## Special Use Areas

Special Use Areas are public recreation areas or land occupied by specialized facilities, including special landscaped areas, community gardens, single purpose sport uses, or sites occupied by recreation buildings such as a senior or community center. There are no defined service areas for this type of parks and open spaces. Currently, five City parks fall into this category: Armory Park/

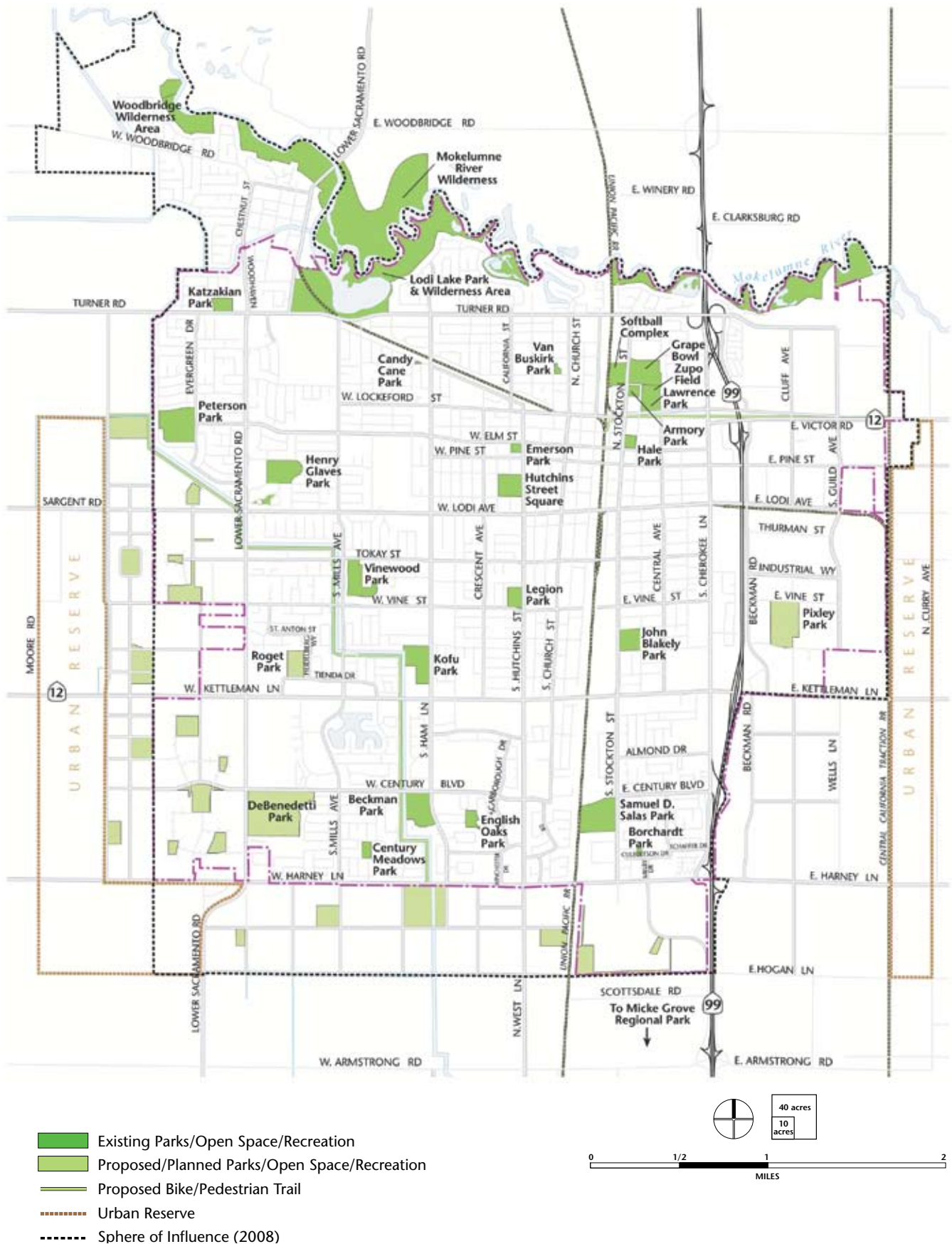
Chapman Field, the Grape Bowl, the Softball Complex, Zupo Field, as well as Hutchins Street Square, described below. These facilities are assets for Lodi residents, but also provide opportunities for regional attraction, such as for athletic tournaments.

**TABLE 6-1: EXISTING PARKS, OPEN SPACES, AND ACTIVITY FACILITIES**

NAME	PARK TYPE	Acres		
		PARK	PARK/BASIN	TOTAL
Armory Park/Chapman Field	Special Use	3.2		3.2
Beckman Park	Neighborhood	0.8	15.8	16.6
Borchardt Park	Mini/Urban	0.8		0.8
Candy Cane Park	Mini/Urban	0.2		0.2
Century Meadows Park	Neighborhood	2.7		2.7
Emerson Park	Neighborhood	3.0		3.0
English Oaks Park	Neighborhood	3.7		3.7
Grape Bowl	Special Use	15.0		15.0
Hale Park	Neighborhood	3.1		3.1
Henry Graves Park	Neighborhood	2.8	11.3	14.0
Hutchins Street Square	Special Use	4.5		4.5
John Blakely Park	Neighborhood	10.0		10.0
Katzakian Park	Neighborhood	5.0		5.0
Kofu Park	Community	2.0	8.0	10.0
Lawrence Park	Neighborhood	2.8		2.8
Legion Park	Neighborhood	6.0		6.0
Lodi Lake Park	Regional	43.0		43.0
Lodi Lake Wilderness Area	Natural Open Space	58.0		58.0
Peterson Park	Neighborhood	2.2	19.8	22.0
Samuel D. Salas Park	Community	2.5	23.5	26.0
Softball Complex	Special Use	7.6		7.6
Van Buskirk Park	Neighborhood	1.0		1.0
Vinewood Park	Neighborhood	0.8	15.2	16.0
Zupo Field	Special Use	3.3		3.3
<b>Total</b>		<b>183.9</b>	<b>93.6</b>	<b>277.5</b>

Source: City of Lodi Department of Park and Recreation, 2009.

**FIGURE 6-1: PARKS, RECREATIONAL FACILITIES, AND OPEN SPACE**







Hutchins Street Square is one of the cultural centers of Lodi, hosting theater performances and offering recreation classes.



Century Meadows Park

**TABLE 6-2: OTHER PARKS AND OPEN SPACES WITHIN THE PLANNING AREA**

NAME	ACRES
Woodbridge Wilderness Area	17
Micke Grove Regional Park	258
<b>Total</b>	<b>275</b>

Source: City of Lodi, 2007; San Joaquin County, 2007.

### *Hutchins Street Square*

This 12-acre facility is a cultural, recreational, business, and community center of Lodi. Originally built in 1919 as Lodi Union High School, the site was burned by arson in 1974, and has transformed over the years into the vibrant community center that is now Hutchins Street Square. It offers student enrichment and adult specialty art and cultural classes, a performance theater, a senior center, a swimming pool, and a conference center. Hutchins Street Square also leases its facilities for private events. The facility is administered by the City and has an advocacy/fundraising board, The Hutchins Street Square Foundation.

### **Other Parks, Recreation Facilities, and Open Spaces**

While the City of Lodi is the main provider of parkland recreational facilities for the community, San Joaquin County also provides amenities in the Planning Area. Table 6-2 and Figure 6-1 illustrate these natural open space resources. In total, these sites add an additional 275 acres of parkland and open space within the planning area.

### *Woodbridge Wilderness Area*

This regional park, operated by San Joaquin County, provides a ¼-mile of Mokelumne River frontage in the Town of Woodbridge. The natural area features a riparian environment where fishing enthusiasts catch trout, black bass and catfish.

### *Micke Grove Regional Park*

This 258-acre regional oak tree park features the Micke Grove Zoo, a Japanese Garden, outdoor picnic shelters and indoor venues for receptions and events, Fun Town at Micke Grove Amusement Park, the San Joaquin Historical Museum, softball fields, and children's playgrounds. San Joaquin County operates the park, which lies just south of Armstrong Road, west of SR-99.



## Park Distribution

Given the crucial role of open spaces in an urban environment, parks should have maximum accessibility. They should be located within a quick walk, bike ride, or drive from residents' homes. Lodi has a thorough network of parks, which are fairly well distributed around the city. A substantial area of southwest Lodi currently lacks open space, but two parks are proposed for the area, as shown on Figure 6-1.

## Parks and Recreation Facilities and Programs

Lodi offers a wide range of recreational programs and facilities within its parks and open spaces, as shown in Table 6-3. Playgrounds, picnic areas, and restrooms are available in nearly all parks. Some notable recreation facilities in Lodi include in-line hockey at Peterson Park, a skateboard park at Kofu Park, the Softball Complex, the Grape Bowl stadium, and Zupo Hardball Field. In addition, many parks also provide sports fields that cofunction as detention basins during the rainy season.

The Lodi Parks and Recreation Department provides a remarkable variety of recreation programs and services to residents and non-residents. The Department offers both youth and adult sports, a kids' summer camp, swim lessons, and a host of other recreation programs. In coordination with Hutchins Street Square, the Lodi Public Library, and the Parks and Recreation Department, the City publishes a calendar of arts and recreation opportunities and offers convenient sign-up for activities.



Facilities at Katzakian Park, the Softball Complex, and the Grape Bowl host recreation programs and provide opportunities for tournaments and special events.

**TABLE 6–3: EXISTING PARKS AND OPEN SPACE, BY RECREATION FACILITIES AND SERVICES OFFERED**

NAME	Restrooms	Play Area	Picnic Area	Ball Fields	Basketball	Soccer Field	Football Field	Tennis Court	Cricket	Swimming	Horseshoes	Skate Park	In-Line Hockey	Concession	Meeting Room	Dog Area	Trails
Armory Park / Chapman Field	•			•										•			
Beckman Park	•	•	•	•												•	
Borchardt Park																	
Candy Cane Park		•	•														
Century Meadows Park		•	•		•												
Century Park		•				•											
Emerson Park	•	•	•	•		•					•						
English Oaks Common		•	•														
Grape Bowl	•			•		•	•							•	•		
Hale Park	•	•	•		•										•		
Henry Graves Park	•	•	•	•		•											
Hutchins Street Square	•	•	•		•					•							
John Blakely Park	•	•	•	•	•				•	•	•						
Katzakian Park	•	•	•	•	•												
Kofu Park	•	•		•		•		•				•			•		
Lawrence Park	•	•	•													•	
Legion Park	•		•		•			•							•		
Lodi Lake Park		•	•							•	•					•	
Lodi Lake Wilderness Area										•							
Peterson Park (Westgate)	•		•	•	•	•		•					•				
Samuel D. Salas Park	•	•	•	•		•								•			
Softball Complex	•		•	•										•	•		
Van Buskirk Park		•	•		•						•						
Vinewood Park	•			•		•			•							•	
Zupo Hardball Field	•			•										•			

Source: City of Lodi Department of Park and Recreation, 2009.

## 6.2 PLANNED IMPROVEMENTS

The City of Lodi already has four undeveloped park and basin sites within City limits, totaling 88 acres. Approved developments could add over 72 acres of open space. The General Plan identifies an additional 210 acres of park, open space, and basin areas.

### Planned Parks and Open Spaces

Table 6-4 details the City's undeveloped parks and open spaces, representing either city-owned properties with approved or proposed plans or parks approved as part of development projects. Roget, DeBenedetti, and Pixley Parks have remained undeveloped since the 1994 Parks Master Plan due to financing challenges. These three parks have proposed plans, but are waiting for City Council's approval. The Lodi Lake West Bank Area will provide a total of eight acres of passive outdoor parkland and open space.

### Approved Developments

The approved Southwest Gateway, Westside, and Reynolds Ranch developments will incorporate park, trail, and drainage basin requirements once the projects are complete. These requirements are outlined in Table 6-5.

### New General Plan Parks, Open Spaces, and Recreation Facilities

#### Distribution and Connectivity

New parks and open spaces have been distributed throughout the new growth areas to ensure convenient access for new and existing residents, as shown in Figure 6-1. Each mixed-use center designated on the Land Use Diagram in Figure 2-1 (see Chapter 2: Land Use) has a park located adjacent to it. In addition, each new school proposed in the new growth area contains an adjacent park. As result, students, residents, workers, and visitors have convenient access to City park, from school, residences, work, or while out shopping at a nearby store. Moreover, this co-location encourages use at different times of day. All new parks face the street and are

**TABLE 6-4: PLANNED PARKS AND DRAINAGE BASINS**

PARKS	TYPE	Acreage		
		PARK	PARK/ BASIN	TOTAL
DeBenedetti Park	Community	24.3	24.7	49.0
Lodi Lake West Bank Area	Natural Open Space	8.0		8.0
Pixley Park	Neighborhood	5.0	22.0	27.0
Roget Park	Community	4.3		4.3
<b>Total</b>		<b>41.6</b>	<b>46.7</b>	<b>88.3</b>

Source: City of Lodi Department of Parks and Recreation, 2009.

**TABLE 6-5: REQUIRED PARKS AND DRAINAGE BASIN FOR APPROVED DEVELOPMENT**

PROJECT NAME	TYPE (#)	Acreage		
		PARK/ OPEN SPACE	PARK/ BASIN	TOTAL
Reynolds Ranch Project	Neighborhood (2)	4.0		4.0
	Ped/Bike Trail Buffer	8.0		8.0
	Basin		9.0	9.0
Southwest Gateway Project	Neighborhood (3)	3.9	17.4	21.0
	Mini (2)	4.2		4.2
	Ped/Bike Trail	5.1		5.1
Westside Project	Neighborhood (2)	4.4	10.3	14.7
	Mini (2)	3.7		3.7
	Ped/Bike Trail	2.3		2.3
<b>Total</b>		<b>35.6</b>	<b>36.7</b>	<b>72.3</b>

Source: City of Lodi Department of Park and Recreation, 2009.



Pixley Park, currently under construction, will create parkland east of SR-99.



The Woodbridge Irrigation Canal could be used as a trail for recreation.

situated on new streets, ensuring that parks are inviting for residents in the neighborhood, but also in the greater community. Parks that abut the street edge provide visual and actual accessibility and ensure safety of users because of these “eyes on the street.”

Two multi-use trails are proposed, along the Woodbridge Irrigation District canal right-of-way, and along Victor Road/Lockford Street railroad right-of-way, from the city’s eastern boundary to downtown. These trails would provide paths for walking, jogging, and biking. Mid-sized neighborhood parks (8-15 acres each) are distributed in the new growth areas in the western and southern portion of the city. Two large parks (each roughly 23 acres), which could contain more expanded recreation facilities and ball fields, are located at each end of the proposed trail, providing a key connection for these amenities.

In sum, the General Plan designates 210 acres of parks and open space to meet the needs of existing and future community members, as shown in Table 6-6. Approximately 40 percent of the new open spaces are proposed to serve as drainage basins only. To maintain the level of service residents and visitors have come to enjoy and expect, the City and private developers must continue to provide new park facilities and drainage basins. Note that while new open space areas are not mapped in the Urban Reserve Area—just as other individual land uses like schools are not shown—these will be required as part of new development in these locations. Calculations assume that 12 percent of the Urban Reserve area will be developed as parkland to meet the needs of new users in this area.

**TABLE 6-6: GENERAL PLAN PARK ACREAGE AND RATIOS**

	Acres			Acres per 1,000 Residents	
	Population	Parks Only	Parks and Drainage Basins	Parks Only	Parks and Drainage Basins
Existing + Planned	63,362	226	366	3.6	5.8
Approved Developments	9,700	36	72	3.7	7.5
Proposed General Plan	26,400	136	210	5.2	8.0
<b>Total</b>	<b>99,500</b>	<b>397</b>	<b>648</b>	<b>4.0</b>	<b>6.5</b>

Note: Total may not sum exactly due to rounding.

Source: Dyett & Bhatia, 2009; Department of Finance, 2008.



## Joint-Use Parks and Facilities

The City of Lodi and the Lodi Unified School District approved a joint-use agreement in 2000; this agreement outlines procedures for sharing facilities, including the parks that the District operates on its school sites. By coordinating use—particularly on weekends and during the summer when school is not in session—community members can enjoy access to more parks, and the City and School District are able to reduce their individual costs. Moreover, joint-use of open spaces that are in the older areas of the city, such as those around downtown and in the eastern neighborhoods, increase park space for existing residents in these more established neighborhoods.

## Standards

The General Plan defines an overall park and open space standard of eight acres per 1,000 residents. At least four acres of this open space should be designated for parks only (that is, excluding drainage basins). This standard ensures a high level of park facilities and services for new residents and enhances the park supply and ratio for existing users. In addition, the City's Parks and Recreation Plan, prepared in 1994, defines more detailed standards, by the type of park.

In 2008, the City provided 366 acres of parkland to its 63,362 residents (including planned open spaces)—a ratio of 5.8 acres per 1,000 residents. Excluding basins reduces these numbers to 226 acres and a ratio of 3.6 per 1,000 residents. Parks and open spaces that result from approved development projects and the General Plan improve these ratios substantially. The General Plan provides an additional 210 acres of parkland for the anticipated population of 26,400 residents, representing a ratio of 5.2 acres of parks and 8.0 acres of parks and drainage basins per 1,000 persons, thereby sustaining the General Plan standard.

Accounting for existing, planned, and General Plan designated open spaces, Lodi's projected 99,500 residents could expect a total of 648 acres of open space under the General Plan. This would provide 6.5 acres per 1,000 residents (or a ratio of 4.0, excluding drainage basins), slightly higher than the ratio currently provided.

## GENERAL PLAN STANDARDS

- Eight acres of parks and drainage basins per 1,000 new residents, with four acres serving as parkland only.
- A park within a quarter-mile of each residence.

TYPE	SERVICE AREA	SIZE (ACRES)	ACRES PER 1,000 RESIDENTS
Mini-Parks/Tot Lots	¼ mile radius	<3	none
Neighborhood	½ mile radius	5 – 15	2.5
Community	½ mile radius	20 – 30	1.8
Regional	Community or Region	50+	0.8
Natural Open Space	Community or Region	Varies	2.1
Special Use Areas	Community or Region	Varies	0.8
<b>Total</b>			<b>8.0</b>

Source: City of Lodi Park and Recreation Plan, 1994.

## Financing

To assist in the acquisition and development of City parks, the City requires dedication of parkland or payment of in-lieu fees on all new residential, commercial, office, and industrial development. The fee is reviewed periodically and revised as necessary. Despite these fees, the City has had difficulty raising enough capital to acquire and develop new parks, open spaces, and recreation facilities. Several recent residential development projects, including Reynolds Ranch, Southwest Gateway, and Westside, have elected to build open space and recreation facilities on site, in sizes consistent with the City requirements. Including parkland in the site development process allows the City to work with developers to ensure that parks are accessible and appropriate for both new and existing community members.

One of the challenges to financing and providing adequate park land is that the City is the parks and recreation provider for the entire north County area (the Lodi Unified School District service area, north of Eight Mile Road).



## 6.3 POLICIES

*For stormwater management policies, see Chapter 8: Safety.*

### GUIDING POLICIES

- P-G1** Provide and maintain park and recreation facilities for the entire community.
- P-G2** Protect natural resource areas, native vegetation, scenic areas, open space areas, and parks from encroachment or destruction.
- P-G3** Improve connectivity between parks and recreation facilities.
- P-G4** Expand non-vehicular paths and trails and bikeways.

### IMPLEMENTING POLICIES

- P-P1** Acquire and develop additional neighborhood and community parks to serve existing and future needs.
- P-P2** Provide open space to meet recreation and storm drainage needs, at a ratio of eight acres of open space per 1,000 new residents. At least four acres must be constructed for park and recreation uses only. Drainage basins should be constructed as distinct facilities, as opposed to dual-functioning park and drainage basin facilities.
- P-P3** Pursue the development of park and recreation facilities within a quarter-mile walking distance of all residences.
- P-P4** Ensure that parks are visible and accessible from the street, welcoming the surrounding neighborhood and citywide users.
- P-P5** Update the City's Open Space and Recreation Master Plan, as necessary to:
  - Arrange a distribution of open spaces across all neighborhoods in the city;
  - Ensure that parks are visible and accessible from the street, to the surrounding neighborhood, and citywide users; and

- Provide a variety of open spaces and facilities to serve the needs of the community, ensuring a balance between indoor and outdoor organized sports and other recreation needs, including passive and leisure activities.

- P-P6** Continue working with the Lodi Unified School District to share use of school and City park and recreation facilities through a mutually beneficial joint use agreement.
- P-P7** Work with developers of proposed development projects to provide parks and trails, as well as linkages to existing parks and trails.
- P-P8** Coordinate with the Woodbridge Irrigation District to develop a recreation trail for walking, jogging, and biking along the canal right-of-way, as shown in Figure 6-1.
- P-P9** Support improvements along the Mokelumne River in consultation and cooperation with the County and with creek restoration and design professionals.
- P-P10** Improve accessibility to the Mokelumne River and Lodi Lake Wilderness Area with walking and biking trails. Site park use and new facilities and trails in Lodi Lake Park such that they will not degrade or destroy riparian or sensitive habitat areas.
- P-P11** Encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure the maximum number and variety of well-adapted plants are maintained.
- P-P12** Encourage retention of mature trees and woodlands to the maximum extent possible. The City shall regulate the removal of trees that are defined as "heritage trees."
- P-P13** Identify and discourage the removal of significant trees on private and public property by establishing a tree inventory and tree management ordinance. Where removal is required, the City shall require a two-for-one replacement or transplantation.

- P-P14** Review infrastructure needs for existing and new recreational facilities, and where appropriate, identify required improvements in the City's Capital Improvement Program.
- P-P15** Renovate the Grape Bowl in order to increase use and revenue generation.
- P-P16** Ensure safety of users and security of facilities through lighting, signage, fencing, and landscaping, as appropriate and feasible.
- P-P17** Continue to provide parks and recreation services to all residents within the Lodi Unified School District service area north of Eight Mile Road. Expand visitor and non-resident fee-based programs to ensure that non-residents pay their share of park maintenance and improvement costs.
- P-P18** Promote the use of the City's existing and planned Special Use park and recreation facilities for both local resident use and for visitor attractions, such as athletic tournaments.
- P-P19** Require master planned residential communities to dedicate parkland consistent with General Plan standards. In-lieu fees will only be acceptable where an exemption from providing a neighborhood park facility would not adversely affect local residents because an existing park is nearby.
- P-P20** Address park dedication and new development impact fees as part of the Zoning Ordinance and Subdivision Regulations Update, to ensure compliance with the General Plan park and open space standard.





The preservation of natural resources is critical to Lodi's environmental quality, economic development and overall quality of life for its residents. Maintaining agricultural land stimulates the city and region's economy and aesthetic identity. The protection of biological resources and habitat encourages biodiversity and the viability of plant and animal life. Good water and air quality are essential for ensuring health and safety. And conserving energy helps to reduce greenhouse gas emissions and preserve non-renewing resources. In addition to natural resources, manmade historic resources, such as building and historical event sites, help to form the city's identity.

The Conservation Element establishes policies for the conservation of natural resources in Lodi. Topics addressed include agricultural and soil resources; biological resources; cultural and historic resources; hydrology and water quality; energy and climate change; and air quality. Water supply and conservation are addressed in Chapter 3: Growth Management and Infrastructure. Flooding and drainage are addressed in Chapter 8: Safety.

## 7.1 AGRICULTURAL AND SOIL RESOURCES

Agricultural activities play an important role in the city's economy, culture, and identity. Grapes, processed foods, nuts, fruit, and milk are all major commodities in the Planning area, with both established national and international markets. Wine grape growers in the Lodi area alone produce an annual crop with an estimated worth \$5 billion, which includes contributions from sales, wages, tourism, and other direct and indirect effects<sup>1</sup>. In addition to the direct contributions of agriculture, there are secondary economic impacts as well, including a food processing industry, winemaking and tourism (see the Economic Development section of Chapter 2: Land Use for details). This section provides an overview of agricultural and soil resources in the Planning Area, including land classified as Important Farmlands and/or containing Williamson Act contracts. Note that Chapter 8: Safety contains policies concerning soil resources as they relate to safety concerns (e.g. geology and seismicity).

### Soils

In 1992, a soil survey for San Joaquin County was conducted by the United States Department of Agriculture, Natural Resources Conservation Service, which creates maps of surface soils for use in land use decision making.

The Planning Area consists of a total of 25 different detailed soil types. Most soil types in the Planning Area are sandy loams (such as Tokay and Acampo), which are highly productive for agriculture and present little constraint to development. Limited acreages of additional types of soil types are also found throughout the Planning Area. The Tokay-Acampo soil group is characterized by moderately well-drained and well-drained, moderately coarse textured soils. The soils are deep to hardpan and located on low fan terraces. The primary detailed soil types present within this group include Tokay and Acampo. The Tokay soils are very deep and well drained. Typically, the surface layer and subsoil

are moderately coarse textured. The Acampo soils are 40 to 60 inches to a hardpan and are moderately well drained. The surface layer and subsoil are moderately coarse textured.

### Agriculture

#### *Important Farmlands within the Planning Area*

Farmland across the State is classified by the California Department of Conservation with respect to its potential for agricultural productivity. In 2004, an estimated 40,730 acres (roughly 80% of the total Planning Area) were designated for some type of agricultural use. As shown in Table 7-1 and Figure 7-1, lands designated as Prime Farmland account for an estimated 65% of the Planning Area.

### Agricultural Production

#### San Joaquin County

The 2007 Agricultural Report for San Joaquin County indicates that milk and grapes are the leading agricultural commodities in the county, with annual values of approximately \$466 million and \$217 million, respectively. The gross value of agricultural production for 2007 in San Joaquin County was estimated at \$2 billion, an all-time high.<sup>2</sup>

#### Lodi Planning Area

Within the Planning Area, 38,240 acres—approximately 75% of the total Planning Area—are currently in active agricultural production, with just 3% of land classified as “Idle” agricultural land. Table 7-2 identifies the type of crops within the Planning Area. Lands classified as vineyards account for a majority of the lands in agricultural production.

<sup>1</sup> Stonebridge Research. “Economic Impact of Wine and Grapes in Lodi 2009.” May 2009. Annual estimate for 2007.

<sup>2</sup> San Joaquin County Agricultural Commissioner's Office, 2007. Note that these values are estimates based on the most common method of sale for the commodities and do not include indirect effects or revenues.

**TABLE 7-1: LAND USE IN PLANNING AREA, BY FARMLAND MAP AND MONITORING PROGRAM DESIGNATION**

<b>FMMP DESIGNATION</b>	<b>DESCRIPTION</b>	<b>ACRES</b>	<b>% OF PLANNING AREA</b>
Prime Farmland	Land that has the best combination of physical and chemical characteristics for the production of crops.	32,926	65%
Farmland of Statewide Importance	Similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.	1,911	4%
Unique Farmland	Land of lesser quality soils used for the production of specific high-economic value crops	4,442	9%
Farmland of Local Importance	Land of importance to the local agricultural economy as determined by each county's board of supervisors and local advisory committee.	1,420	3%
Grazing Land	Land on which the existing vegetation is suited to the grazing of livestock.	31	<1%
Urban and Built-Up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to 10-acre parcel.	8,701	17%
Other Categories	Low-density rural developments; brush, timber, wetland, and riparian areas. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres.	1,400	3%

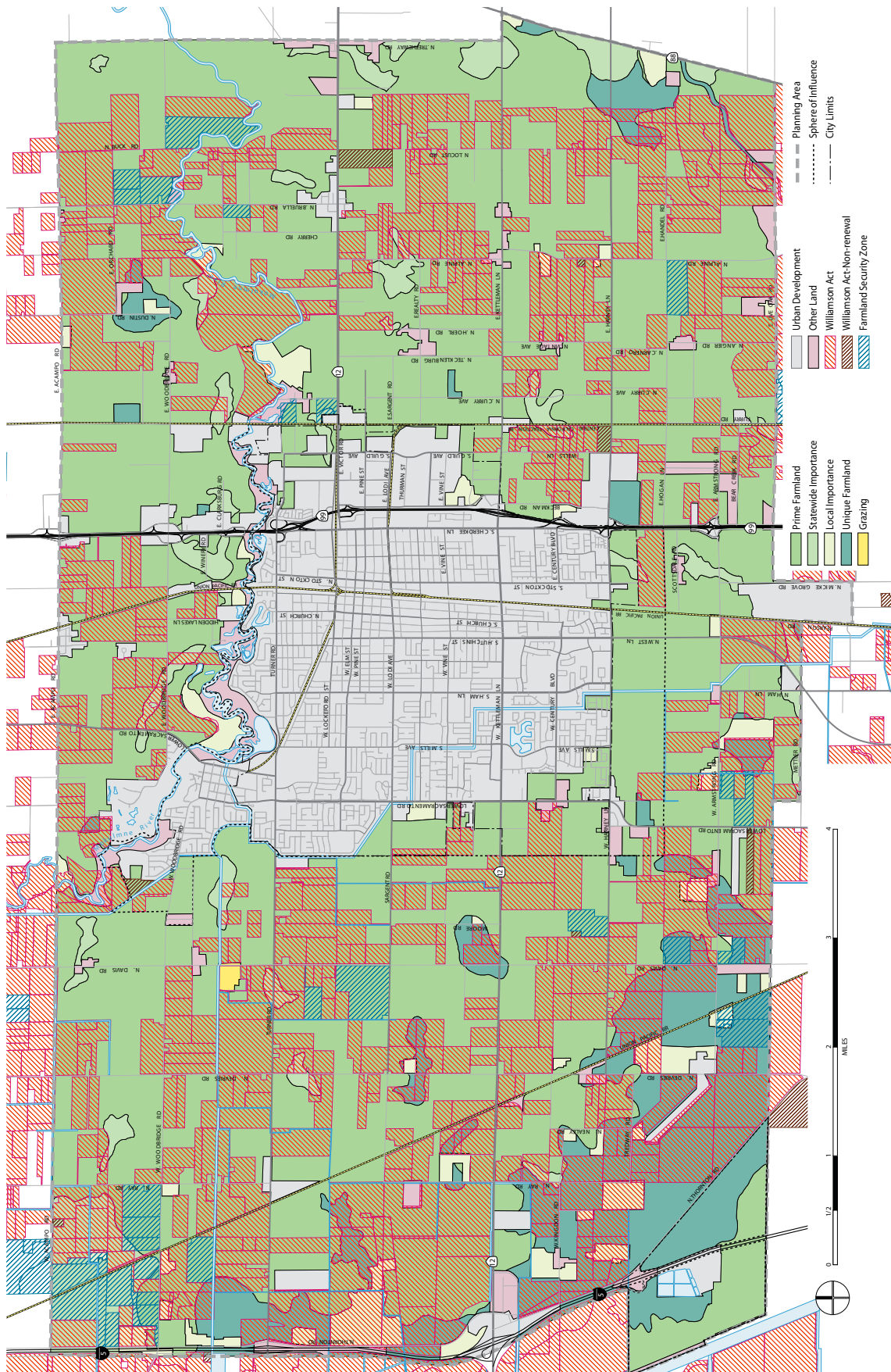
Source: California Department of Conservation, 2004b; Dyett & Bhatia, 2007; ESA, 2007.

**TABLE 7-2: CROP TYPE DISTRIBUTION**

<b>CROP TYPE</b>	<b>ACRES</b>	<b>% OF PLANNING AREA</b>
Vineyard	25,275	50%
Urban	8,628	17%
Deciduous Fruits and Nuts	4,138	8%
Pasture	3,635	7%
Field Crops	2,273	4%
Native Vegetation	1,983	4%
Idle	1,330	3%
Truck, Nursery and Berry Crops	1,152	2%
Grain and Hay Crops	976	2%
Livestock and Poultry Farms	770	2%
Native Riparian	309	<1%
Water	319	<1%
Citrus and Subtropical	22	<1%

Source: Department of Water Resources, 1996; Dyett & Bhatia, 2007; ESA, 2007.

**FIGURE 7-1: LODI FARMLANDS**



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## Preservation and Conservation

### *Williamson Act*

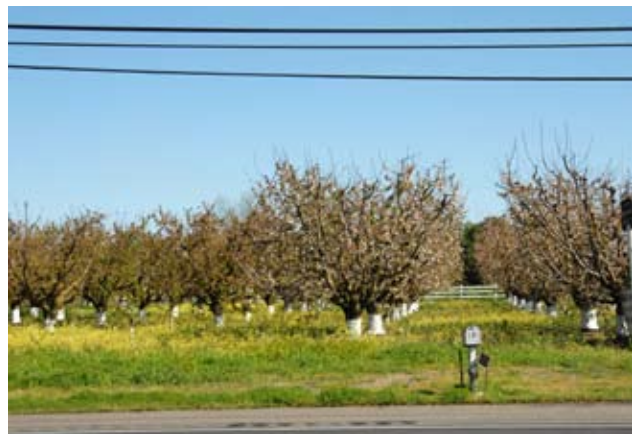
The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the Williamson Act, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of 10 years. Contracts are automatically renewed every year, for an additional year, unless a property owner initiates the non-renewal process which starts the nine-year non-renewal period, after which time the contract is terminated.

In August 1998, the Williamson Act's Farmland Security Zone (FSZ) provisions were enacted with the passage of Senate Bill 1182 (California Government Code Section 51296-51297.4). This sub-program, called the "Super Williamson Act," enables agricultural landowners to enter into contracts with a specific county for 20-year increments. Land restricted by an FSZ contract is valued for property assessment purposes at 65% of its Williamson Act valuation, or 65% of its Proposition 13 valuation, whichever is lower.

Figure 7-1 provides the locations of parcels within the Planning Area that have an active Williamson Act Contract (18,251 acres), a Williamson Act Contract in non-renewal status (124 acres), or a FSZ contract (1,343 acres).<sup>3</sup> The General Plan growth areas coincide with 927 acres of active contracts, 16 acres in non-renewal contracts and 37 FSZ contracts. General Plan policies support the continuation of Williamson Act contracts in anticipated urban growth areas, until the contracts have expired and the market is ready for urban development.

### *Farmland Conversion*

While one quarter of the gross new General Plan potential development area is infill and will not reduce the amount of farmland, some conversion of agricultural



Lodi's climate and soil is well suited for agricultural production—a key industry in the city's and region's economy

<sup>3</sup> Williamson Act contract mapping and analysis relies on the following sources: California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Sacramento, CA, 2004; Dyett & Bhatia, 2007; and ESA, 2007.

land to urban use is inevitable given Lodi's growth needs. If the General Plan were developed to maximum capacity, 2,893 acres of Prime Farmland would be replaced by urban development (including parks and open spaces). This area represents 69% of the new urban area delineated in the General Plan Land Use Diagram. The most prevalent crop types that would be displaced if the General Plan developed to its fullest potential are vineyards (1,676 acres), deciduous fruits and nuts (516 acres), and field crops (322 acres).

However, multiple policies are identified in this General Plan to prevent excessive agricultural land conversion, including prioritizing infill development within the existing City limits, compact development in new growth areas, and the continuation of the vast majority of agricultural activities in the Planning Area.

## 7.2 BIOLOGICAL RESOURCES

While a significant majority of the Planning Area is urbanized or in agricultural use, the Planning Area includes a variety of biological communities which provide habitat for both rare and common wildlife and plant species. This section describes biological resources existing or potentially occurring within the Planning Area.

### Wildlife Habitats

Wildlife habitats provide food, shelter, movement corridors, and breeding opportunities for wildlife species. More common wildlife species frequently use more than one habitat type—for example, riparian habitat for breeding sites, resting sites, cover while moving from one area to another, or thermal cover, and range into open upland grasslands, scrub, or over open water to forage. The Planning Area contains mostly human-modified habitats. A mosaic of smaller areas of lacustrine, wetland, riparian, grassland, and open water habitat types occur along the Mokelumne River and other waterways in the Planning Area. All of these habitats, as classified in California Wildlife Habitats, are listed in Table 7-3 and briefly described in the section below.<sup>4</sup>

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<sup>4</sup> Mayer, Kenneth E. and W.F. Laudenslayer, Jr. "A Guide to Wildlife Habitats of California." State of California Resources Agency, Department of Fish and Game. Sacramento, CA, 1988.



Plan policies help to enable smooth transitions between urban and agricultural uses.

## Agricultural Areas

Vegetation composition and structure in agricultural habitats are variable, depending on the type of crops grown, timing of operational activities, and the time of year. For these reasons, habitat value for wildlife is also variable. Croplands provide food and water for these species, but do not generally provide long-term shelter due to the frequency of disturbance. Typical wildlife species that may use agricultural habitat include a variety of rodents—such as California ground squirrel (*Spermophilus beecheyi*) and California vole (*Microtus californicus*); and birds—such as red-winged blackbird (*Agelaius phoeniceus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), and yellow-billed magpie (*Pica nuttali*).

## Urban Areas

Wildlife species that use urban habitat are variable, depending on the density of development, the surrounding land use, and the types and availability of vegetation and other habitat features available for foraging, nesting, and cover. In general, wildlife habitat in urban areas consists of landscaped areas with a mix of both native and exotic ornamental plant species. Species using these areas are conditioned to a greater level of human activity than those in natural and less developed areas. Wildlife species typically found in urban habitat include American crow (*Corvus brachyrhynchos*), rock dove (*Columba livia*), American robin (*Turdus americana*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*).

## Annual Grassland

Annual grassland areas are generally surrounded by agricultural land, but may also border smaller areas of wetland or riparian habitat. Along the Mokelumne River, annual grassland habitats are interspersed with lacustrine and open water habitats as well. Annual grassland is typically composed of herbaceous exotic

**TABLE 7-3: HABITAT AND LAND USE ACREAGE FOR THE PLANNING AREA**

LAND USE/HABITAT	ACRES	% OF PLANNING AREA
Agriculture	41,110	81%
Urban	8,400	17%
Annual Grassland	620	1%
Valley Foothill Riparian	350	<1%
Freshwater Emergent Wetland	130	<1%
Lacustrine	120	<1%
Water	120	<1%
<b>Total</b>	<b>50,850</b>	<b>100%</b>

Source: California Department of Forestry and Fire Protection 2002; San Joaquin County, 2003; Dyett & Bhatia, 2007; and ESA, 2007.



Agriculture land is the primary habitat type in the Planning Area (top). Lacustrine habitat is more limited; it supports aquatic life along the Mokelumne River and around Lodi Lake (bottom).

grasses and forbs, and may include weedy species such as perennial ryegrass (*Lolium perenne*), soft chess (*Bromus hordeaceus*), foxtail barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), wild oats (*Avena* sp.), and stork's bill (*Erodium botrys*). Annual grassland habitats that contain or are adjacent to more complex habitats or habitat features (e.g. riparian) are more likely to have a greater habitat value and support a greater diversity of wildlife species. Wildlife species that use annual grassland include a variety of sparrows, white-tailed kite, northern harrier, red-tailed hawk, burrowing owl (*Athene cunicularia*), ring-necked pheasant (*Phasianus colchicus*), various rodents, lizards, snakes, and salamanders.

### **Valley Foothill Riparian**

Valley foothill riparian habitat consists of an overstory canopy of valley oak (*Quercus lobata*) and may include interior live oak (*Quercus wislizenii*), black walnut (*Juglans hindsii*) and boxelder (*Acer negundo*). Understory vegetation may include toyon (*Heteromeles arbutifolia*), wild grape (*Vitis californicus*), and Himalayan blackberry (*Rubus bicolor*). Riparian habitats can be complex in structure and composition, and abundant in wildlife diversity and richness. Many species of wildlife use this habitat type for movement corridors, foraging, cover, and breeding. Wildlife species that use valley foothill riparian habitat include black phoebe (*Sayornis nigris*), Nuttall's woodpecker (*Picoides nuttallii*), ruby-crowned kinglet (*Regulus calendulus*), red-shouldered hawk (*Buteo lineatus*), gray squirrel (*Sciurus griseus*), and raccoon.

### **Freshwater Emergent Wetland**

Freshwater emergent wetland is adapted to frequent inundation and ponding and includes hydrophilic emergent species such as common cattail (*Typha latifolia*) and tule rush (*Scirpus acutus*). Within the Planning Area, freshwater emergent wetland occurs in small patches adjacent to annual grassland, and can be surrounded by agricultural lands, or interspersed with a variety of other habitats along the Mokelumne River corridor. Wetland habitats provide habitat for wildlife species such as waterfowl and wading birds, blackbirds (*Agelaius* sp.),

amphibians, and reptiles such as garter snake (*Thamnophis* sp.) and pond turtle (*Emys marmorata*).

### **Lacustrine**

Lacustrine is an aquatic habitat type occurring in relatively small numbers predominately along the Mokelumne River. This habitat is limited within the Planning Area. Lacustrine habitat includes lakes, reservoirs, ponds, and ponded areas along streams. Permanent lacustrine habitats typically support fish species and also provides foraging, cover, and breeding habitat for other aquatic species such as pond turtle, amphibians, various waterfowl and piscivorous species such as belted kingfisher (*Ceryle alcyon*), great blue heron (*Ardea herodias*), and bald eagle (*Haliaeetus leucocephalus*).

### **Open Water**

Open water or riverine habitats in the Planning Area include the Mokelumne River, which runs through the northern portion of the Planning Area, and the White Slough Water Pollution Control Plant in the southwestern portion of the Planning Area along I-5. It is the least abundant habitat type in the Planning Area. Open water, like similar lacustrine habitat, provides habitat for a variety of fish and other aquatic or semi-aquatic species.

## **San Joaquin County Multi-Species Conservation and Open-Space Plan**

The San Joaquin County Multi-Species Conservation and Open-Space Plan (SJMSCP) is a habitat conservation plan that seeks to protect agriculture, open space, habitat, and wildlife, in order to address the impacts of urban development and conversion of open space land. The Plan outlines a voluntary strategy that developers and property owners can participate in to mitigate impacts of development. In 2001, the city of Lodi adopted the SJMSCP, thereby allowing project applicants to use this plan to mitigate open space conversions while satisfying CEQA requirements. Project applicants may: pay an in-lieu fee that mitigates cumulative impacts; dedicate habitat lands as conservation easement or fee title; purchase mitigation bank credits from a mitigation bank approved by SJMSCP; or propose an



alternative plan, consistent with the SJMSCP goals and equivalent in biological value.

In preparing the SJMSCP, land uses and habitats were mapped throughout the county, categorized into land use categories, and incorporated into a geographic information system database to help determine compensation fees. Many of the new urban areas defined by the General Plan are not included in the mapped extent for Lodi. Such projects will be subject to the Plan's "unmapped project process," which includes a case-by-case review by the Habitat Technical Advisory Committee. Table 7-4 identifies the amounts, general locations, and descriptions of the land use compensation zone categories.

## Special Status Species in the Planning Area

Special-status species are plants and animals that, because of their documented rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as "sensitive" on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives.

**TABLE 7-4: SAN JOAQUIN COUNTY MULTI-SPECIES CONSERVATION AND OPEN-SPACE PLAN LAND USE COMPENSATION ZONES WITHIN THE PLANNING AREA**

LAND USE COMPENSATION ZONE	BIOLOGICAL COMMUNITIES	PLANNING AREA ACREAGE <sup>1</sup>	% OF PLANNING AREA
Multi-Purpose Open Space	Orchards, vineyards, and some water features	21,820	43%
Agricultural Habitat Open Space	Perennial and annual croplands	18,590	36%
No-Pay Zone	Urban	8,710	17%
Natural Land	Riparian, vernal pool, grassland habitats, and some agricultural rangeland	1,670	3%
Vernal Pools	Vernal Pools	40	< 1%
<b>Total</b>		<b>50,830</b>	<b>100%</b>

<sup>1</sup> Total acreage for each land use compensation zone does not correspond entirely to the total acreage identified for each habitat described in Table 7-3.

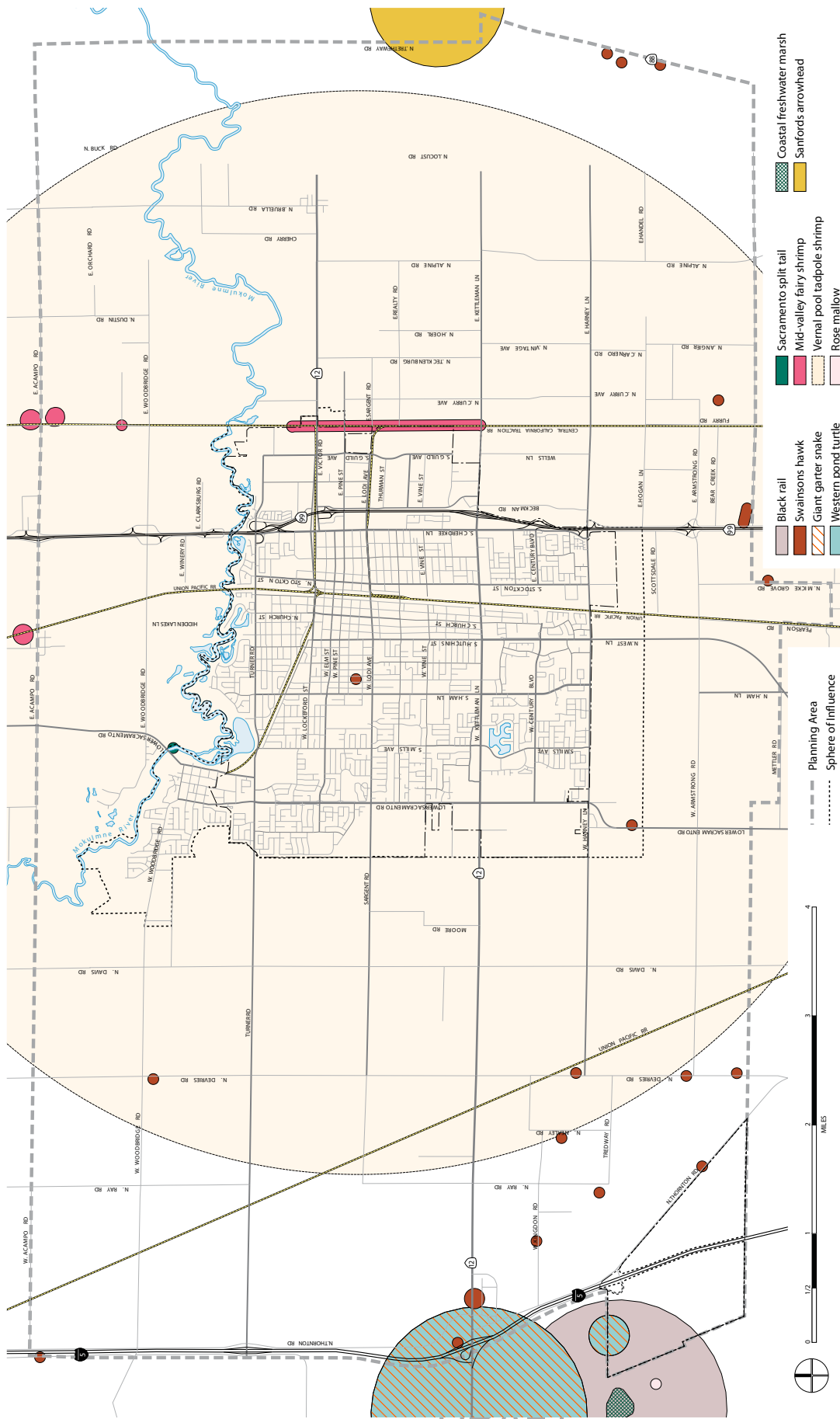
San Joaquin County, 2003; Dyett & Bhatia, 2007; and ESA, 2007.

**TABLE 7-5: SPECIAL-STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE PLANNING AREA**

SCIENTIFIC NAME, COMMON NAME	STATUS	GENERAL HABITAT	SJMSCP COVERED?
<i>Branchinecta lynchi</i> , Vernal pool fairy shrimp	Federal Threatened	Lifecycle restricted to vernal pools.	Yes
<i>Buteo swainsoni</i> , Swainson's hawk	State Threatened	Forages in open plains, grasslands, and prairies; typically nests in trees or large shrubs.	Yes

Source: CNDDB, 2007; SJMSCP.

### FIGURE 7-2: SENSITIVE SPECIES



A table in Appendix XXX identifies the complete list of special species that may be found in the Planning Area, their general habitat requirements, and whether or not the species is covered under the SJMSCP. Species covered by the SJMSCP are subject to the requirements for mitigation or compensation as identified in the SJMSCP or as required by federal and state regulations. As shown in Figure 7-2 and Table 7-5, two CNDDB-listed species, Swainson's hawk and vernal pool tadpole shrimp, may potentially occur within the current City limits and new growth areas.

### Habitat Conversion

Annual grassland and riparian habitats provide important advantages to several sensitive species in the Planning Area. Development in the Planning Area could eliminate or modify agricultural land and some riparian and seasonally wet grassland. However, the General Plan does not propose any development along the Mokelumne River where the most significant concentration of sensitive resources is located. Policies seek to minimize the disturbance of habitat and wildlife and avoid fragmentation of these resources through the development review process, site-specific biological studies, and by prioritizing contiguous urban development and open space planning.

## 7.3 CULTURAL RESOURCES

In addition to a desire by the local community to protect cultural resources, State laws, most notably CEQA, protect archaeological and other cultural resources.

**Cultural resources** are defined as buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. Information on cultural resources was obtained through archival research, contacts with knowledgeable people, and a reconnaissance-level field survey of the Planning Area.

**Archaeological resources** are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric (before the introduction of writing in a particular area) or historic (after the introduction of writing). The majority of such places in this region are associated with either Native American or Euroamerican occupation of the area.

**Contemporary Native American resources**, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values.

### Prehistoric Context

Although the Planning Area may have been occupied by Native Americans for 12,000 years or longer, the evidence of early human use is likely buried by alluvial deposits that have accumulated during the last several thousand years. Reliable evidence from archaeological excavations indicates that this region of California has certainly been occupied for at least 6,000 years. Later periods are better understood because there is more representation in the archaeological record.

The ethnographically known people (the Native American people occupying the Planning Area at the time of contact with non-Native American peoples such as explorers and settlers) are called Northern Valley Yokut. The Northern Valley Yokut Indians held an

extensive region within north-central California, which ranged between the Diablo Mountain range to the west, the Sierra Nevada to the east, the north bend of the San Joaquin River to the south, and the Mokelumne River to the north. Semi-sedentary, the Yokuts lived in single-family dwellings and depended heavily on salmon, waterfowl and acorns for subsistence. Their technology included pottery, baskets, bow and arrow, bedrock mortars, pestles, portable mortars, and flaked stone tools. The Yokut traded with the Paiute and Shoshone to the east, Salinan and Coastanoan on the coast, and Miwok in the western central valley. (Wallace 1978)

## Existing Cultural Resources

Areas of relative cultural resource sensitivity can be identified based on the patterns that are reflected in the known site locations and by applying certain assumptions regarding the environmental factors that predict archaeological site locations. For instance, areas proximal to water sources, high ranking food resources, relatively flat slope aspect, and areas of social and political importance would be factors that would predict prehistoric use. In areas where comprehensive cultural resource surveys have not been undertaken—such as the current Planning Area where only six percent of the total area is estimated to have been surveyed—there is a general greater utility in the protection and management of the resources than presenting specific site locations.

According to the record search data and the foregoing assumptions, most prehistoric settlements within and surrounding the Planning Area were focused along the Mokelumne River and Bear Creek (southeast of Lodi). Although some areas have greater sensitivity than others for the presence of prehistoric or historic archaeological resources, it is possible to encounter archaeological deposits during ground-disturbing activities in almost any location.

### Prehistoric Archaeological Resources

The evidence from previous survey work and site investigations in the Planning Area indicate that prehistoric site types in unsurveyed portions of the Planning Area may include:

- Surface scatters of lithic artifacts and debitage associated with or without associated midden accumulations, resulting from short-term occupation, and/or specialized economic activities, or long-term occupation.
- Bedrock milling stations, including mortar holes and metate slicks, in areas where suitable bedrock outcrops are present.
- Petroglyphs and/or pictographs.
- Isolated finds of cultural origin, such as lithic flakes and projectile points.

### Historic Archaeological Resources

Historic archaeological site in portions of the Planning Area may include:

- Historic artifact scatters and buried deposits of historic debris and artifacts;
- Building foundations and associated deposits;
- Levees and roads; and
- Remains of farms and ranches.

## Native American Consultation

Cultural resource identification inquiries also included a letter to the Native American Heritage Commission requesting a review of the sacred lands file in regards to the Planning Area and a list of Native American contacts within the region. The Commission's February 13, 2007 response stated that the sacred lands files did not contain cultural resources information for the immediate Planning Area, but cautioned that absence of specific site information does not indicate the lack of cultural resources. The response also included eight contacts who have requested information on projects such as this and who may have knowledge of cultural resources within the Planning Area. On March 7, 2007, ESA sent letters to designated contacts with information about the proposed project and a request to contact staff if there were any questions or concerns.



Since that time, one letter had been received from Billie Blue Elliston of the Ione Band of Miwok Indians, who stated that their research indicated that the project may be within their tribe's ancestral territory and asked to remain informed about the project. On May 9, 2007, follow-up phone calls were made to the individuals and organizations identified by the Native American Heritage Commission. No additional information was obtained as a result of these calls.

## 7.4 HISTORIC RESOURCES

Historic resources are standing structures of historic or aesthetic significance. Architectural sites dating from the Spanish Period (1529-1822) through the post-World War II period (1945-1955) are generally considered for protection if they are determined to be historically or architecturally significant. Sites dating after the post-World War II period may also be considered for protection if they could gain significance in the future. Historic resources are often associated with archeological deposits of the same age. A records search of pertinent survey and site data at the Central California Information Center, California State University, Stanislaus, in February, 2007 [CCIC # 6606L] revealed known and recorded cultural resources within the Planning Area. An inventory of properties listed in the National Register of Historic Places (National Register), the California Register of Historic Resources (California Register), the California Inventory of Historic Resources (1976), the California Historical Landmarks (1996), the California Points of Historical Interest (1992 and updates), and the California Office of Historic Preservation (OHP) are also provided. Due to the extensive number of surveys and archaeological sites in the project vicinity, a comprehensive listing of the reports is not included. Rather, an example of the types of studies and archaeological sites is provided.

### Historic Setting

By the early 1800s, Spaniards had started exploring the area, adversely impacting the Native population. The 1848 Gold Rush further affected the Yokut population as white settlers began to inhabit the area permanently or travel through on their way to the gold fields in the Sierra Nevada. Lodi began in 1869 as the Town of Mokelumne, founded by the Central Pacific Railroad. The railroad connected Lodi with Sacramento to the north and Oakland and Stockton to the south, and the town was laid out parallel to the tracks. To avoid confusion with Mokelumne Hills and Mokelumne City, the townspeople changed the name to Lodi in 1874.<sup>5</sup>

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<sup>5</sup> Gudde, 1998.



© City of Lodi/Steve Mann

Old images of Sacramento, School, and Lockeford streets.

Local industries, such as the Lodi Flouring Mill, and agriculture promoted further growth in the area. The Ivory Store, at the corner of Pine and Sacramento streets, was established in 1869, and other merchants soon followed with their businesses.<sup>6</sup> Access to rail transportation allowed crops and products to be transported throughout the country. Wheat and watermelons were the predominant crops throughout the nineteenth century.

In 1885, Japanese immigrants settled the area to work on ranches. Over time, they purchased lands and grew grapes. In the late 1890s German nationals settled Lodi and also participated in the grape industry. Flame Tokay grapes were first planted in the area in the late nineteenth century and by 1900, Lodi had over two million grape vines. In 1906, the City was incorporated, and held its first Tokay Carnival the next year, which would later evolve into the Lodi Grape Festival.<sup>7</sup> The Lodi Arch, which covers the gateway entrance to downtown, was built to commemorate the first Grape Festival in 1934.

Over the following century, Lodi grew from a population of 2,000 to over 60,000. In 1912 Lodi's first City Hall/fire station was built on Main Street. The current City Hall building was dedicated in 1928. In 1913, the Lodi Union High School opened for classes, and in 1919, entrepreneur Roy Allen brewed and sold his first batch of A&W Root beer in Lodi. Local farmers and wineries weathered the Prohibition Era well, growing grapes and shipping them out in secret for wine making. In 1956 the Federal Government officially acknowledges Lodi as a wine grape growing district. The City's continued growth led to the creation of numerous schools and public utilities and services throughout the second half of the twentieth century. Since the mid-1990s, the City has been involved in numerous restoration projects for its historic resources throughout the city, including the City Hall, the Lodi Arch, and the Southern Pacific Lodi Train Station.

<sup>6</sup> City of Lodi, 2006.

<sup>7</sup> City of Lodi, 2006.

## Historic Preservation Framework

### Federal Programs

#### *National Historic Preservation Act*

The National Historic Preservation Act (NHPA), enacted in 1966, established the National Register, authorized funding for state programs with participation by local governments, created the Advisory Council on Historic Preservation, and established a review process for protecting cultural resources. The NHPA provides the legal framework for most state and local preservation laws. The National Register is the Nation's official list of cultural resources worthy preservation. It is part of a national program to coordinate and support public and private efforts to identify, evaluate and protect historic and archaeological resources.

### State Programs

#### *California Register of Historical Resources*

The California Register was established in 1992, through amendments to the Public Resources Code, as an authoritative guide to be used by state and local agencies, private groups and citizens to identify the State's historical resources and to indicate what properties are to be protected from substantial adverse change. The California Register includes resources that are formally determined eligible for, or listed in, the National Register; State Historical Landmarks numbered 770 or higher; Points of Historical Interest recommended for listing by the State Historical Resources Commission (SHRC); resources nominated for listing and determined eligible in accordance with criteria and procedures adopted by the SHRC; and resources and districts designated as city or county landmarks when the designation criteria are consistent with California Register criteria.



Most of the city's historic structures, including the Women's Club (top) and Hotel Lodi (bottom) are located downtown.





City Hall (top), the Southern Pacific Train Station (middle), and the Lodi Arch (bottom) are some of the City's prized historic resources and restoration projects.

### *California Point of Historical Interest Program*

The California Point of Historical Interest Program was established in 1965 to recognize local historic properties not able to meet the restrictive criteria of the State Historical Landmarks program. The criteria for the Points are the same as those that govern the Landmark program, but are directed to local (city or county) areas. California Points of Historical Interest do not have direct regulatory protection, but are eligible for official landmark plaques and highway directional signs.

### *Mills Act Historic Property Contract*

State-enabling legislation, known as the Mills Act, allows jurisdictions to enter into contracts with private property owners of qualified historic properties to provide a property tax reduction in exchange for the owners agreeing to preserve, rehabilitate and maintain their historic properties. Mills Act historic property contracts always have provisions for rehabilitating a property with specifications for complying with the Secretary of the Interior's Standards for Rehabilitation. This property tax reduction is usually most beneficial to owners who have made recent purchases.

### **Local Preservation Ordinance**

A historic preservation ordinance is the primary tool used by municipalities to protect historic resources in a community. Local governments in California have authority to adopt a historic preservation ordinance to provide regulations regarding historic and cultural resources. Historic preservation ordinances are structured to address the particular needs and resources within a community.

While Lodi has several individual buildings on the National Register, it does not have any designated historic or conservation districts. Such districts would ensure that the overall neighborhood character of a neighborhood—within which individual buildings may not be designated, but which contribute to the overall character—are protected and enhanced. Establishing historic districts would help address issues of incompatible new construction and additions that have been occurring in some of the city's historic neighborhood. It would also address issues of public realm—such as streets, lamp posts, and trees—that contribute to the overall urban character of a district.



While delineation of historic districts is beyond the scope of the General Plan, the Plan provides the policy basis and direction for more detailed evaluation and delineation of historic districts, and a basis for implementing standards and guidelines for conservation of the character of historic districts. Within historic districts, key features such as building typology, streetscape, lighting, materials, and signage could be maintained and preserved. Regardless of inclusion in a historic district, the character of existing older neighborhoods should be preserved by ensuring that new infill development is consistent with the existing form.

## Existing Historic Resources

According to the record search data and the foregoing assumptions, most of the historically significant resources are clustered around the downtown area and in Woodbridge. Properties that are listed on or found eligible for listing in the National Register of Historic Places or which have not yet been evaluated for significance are presented in Table 7-6 and Figure 7-3. Lodi currently has six buildings in the National Register of Historic Places as well as several others that are eligible.

**TABLE 7-6: HISTORIC PROPERTIES IN LODI AND WOODBRIDGE**

SITE/BUILDING	LOCATION	YEAR BUILT	HISTORIC LANDMARK DESIGNATION	NATIONAL REGISTER STATUS
Bridge #29-2R	SR-99	1930		Identified, not evaluated.
Hotel Lodi	5 S. School Street	1915	NR	Listed in NR, individual property
Lodi Arch/Mission Arch	Pine Street	1907	NR, SHL No 931	Listed in NR, individual property
Lodi Armory	333 N. Washington St	1930		Determined eligible for NR as an individual property
Lodi Carnegie Library	305 W. Pine Street	1909		Determined eligible for NR as an individual property
Lodi City Hall	221 W. Pine Street	1928		Determined eligible for NR as an individual property
Miyajima Hotel	4 N. Main Street	1937		Identified, not evaluated
Morse/Skinner Ranch House	13063 SR 99	1869	NR1	Listed in NR, individual property
Southern Pacific Railroad Depot	2 N. Sacramento St.	1907		Removed from eligibility for NR
Theodore H Beckman Ranch House	1150 W. Kettleman Ln.	1902	SPH14	Determined eligible for NR as a contributor to a historic district
Women's Club of Lodi	325 W. Pine Street	1923	NR	Listed in NR, individual property
IOOF Hall	18961 Lower Sacramento Rd, Woodbridge	1860	NR	Listed in NR, individual property
San Joaquin Valley College	18500 N Lilac St, Woodbridge	1879	SHL No. 520	CR, needs reevaluation
Wood's Ferry and Wood's Bridge	County Hwy J10, Woodbridge	1852 & 1858	SHL No. 163	CR, needs reevaluation
Woodbridge	County Hwy J10, Woodbridge	1859	SHL No. 358	CR, needs reevaluation
Woodbridge Masonic Lodge #131	1040 Augusta Street, Woodbridge	1882	NR	Listed in NR, individual property

Source: Directory of Properties in the Historic Property Data File for San Joaquin County, Office of Historic Preservation.

FIGURE 7-3: HISTORIC RESOURCES



## 7.5 HYDROLOGY AND WATER QUALITY

Lodi has several water resources within the Planning Area that contribute to the water supply and provide habitat for wildlife. This section discusses surface and groundwater resources and policies that seek to ensure that future development does not negatively impact water quality. For a discussion of water supply and conveyance as the city's population grows, see Chapter 3: Growth Management. Flooding and drainage is discussed in Chapter 8: Safety.

### Topography and Climate

The Planning Area is a low-lying, gently sloping former floodplain of the Mokelumne River that lies within six miles of the San Francisco Bay-San Joaquin River Delta (Delta). Elevations of the Planning Area range from about 50 feet above sea level along the river bank in the northeastern portion to about 25 feet in the southwest corner. The average slope is about 0.1-0.2 percent, with west-southwest aspect toward the Delta sloughs.

The climate in the Planning Area consists of long, dry, hot summers and mild winters. Between 1948 and 2006, the average annual temperature ranged from a low of 46 degrees Fahrenheit (°F) and a high of 74°F. Within this same time period, annual rainfall was approximately 18 inches.<sup>8</sup>

### Surface Water Resources

Small streams or creeks that pass through the Planning Area include Pixley Slough and Bear Creek, located in the southeastern portion of the Planning Area (see Figure 7-4). A number of canals and drainages are scattered throughout the Planning Area and in particular near the western boundary closer to the Delta. No other surface streams are recognized within the Planning Area.

Lodi Lake is located behind Woodbridge Dam on the Mokelumne River within the City's northern boundary. Lodi Lake also serves as a diversion for

Woodbridge Irrigation District's (WID) South Main Canal, providing irrigation waters to currently undeveloped lands in the western and southern portions of the Planning Area. The South Main Canal runs through the central portion of the Planning Area and within the existing City limits.

The Mokelumne River is the major waterway running through the northeastern portion of the Planning Area. This important waterway is located within the San Joaquin Valley watershed and drains about 660 square miles above the Planning Area and extends to 10,000 feet high in the Sierra Nevada. The Comanche Reservoir is located on the Mokelumne River approximately 20 miles northeast of the Planning Area.<sup>9</sup>

### Surface Water Quality

Impacts to water quality result from runoff during wet weather events, direct discharge associated with industrial/commercial activities and illicit dumping. Treated sewage generated in the Planning Area is eventually discharged to the San Joaquin River via the City's wastewater treatment facility, but the discharge is generally cleaner than the river water quality and is not considered a pollutant. Pollutant sources within the Planning Area may be generated from past waste disposal practices, agricultural chemicals, and chemicals and fertilizers applied to landscaping. Contaminants may include sediment, hydrocarbons and metals, pesticides, nutrients, bacteria, and trash.

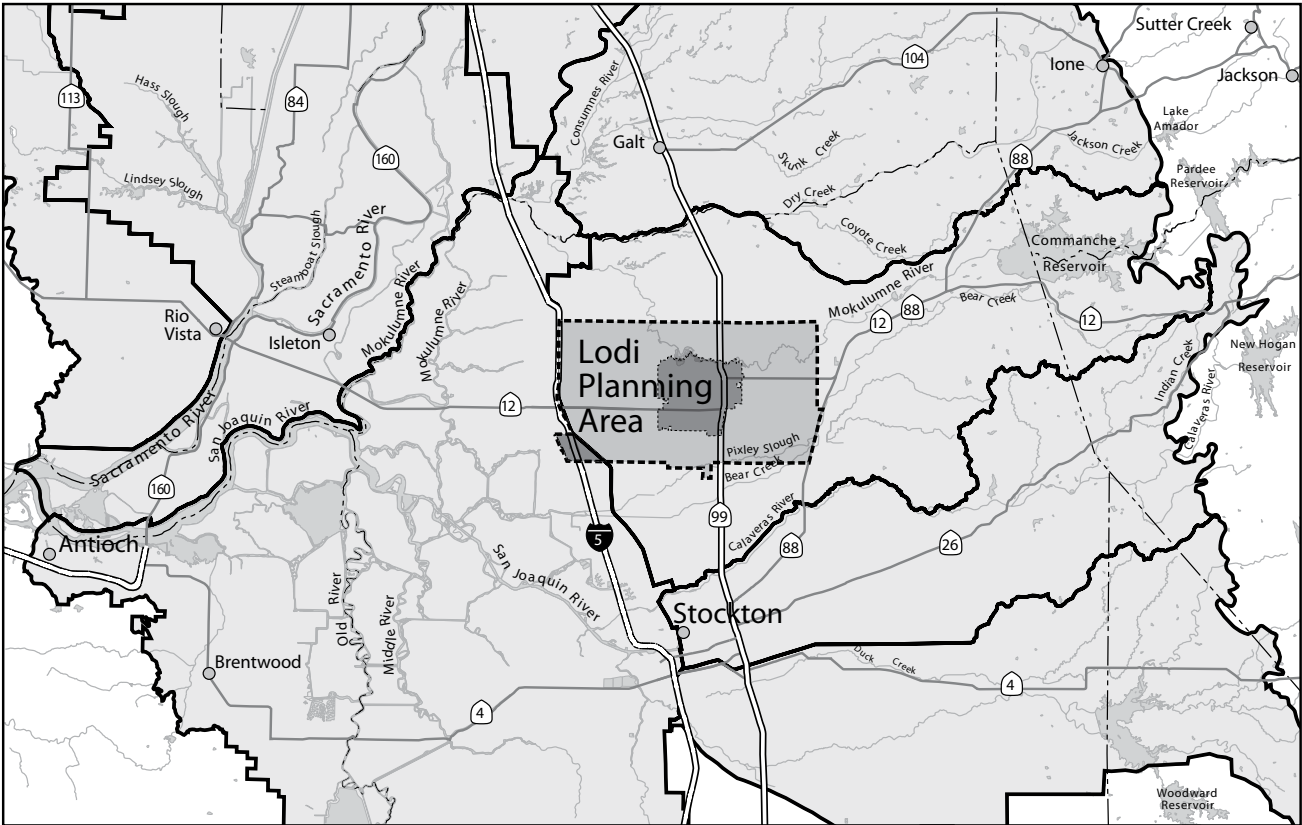
The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act, Section 303(d), has prepared a list of impaired water bodies in the State of California. As of 2006, the Lower Mokelumne River was listed as being impaired by zinc and copper. These contaminants likely originated upstream from the Planning Area from mining activities. The Central Valley Regional Water Quality Control Board is required to develop and implement a plan to lower the amounts of these contaminants in this water body to an acceptable level.<sup>10</sup>

<sup>8</sup> Western Regional Climate Center, 2007.

<sup>9</sup> City of Lodi, 1988; Department of Water Resources, 2006.

<sup>10</sup> SWRCB, 2006.

FIGURE 7-4: REGIONAL WATERSHEDS AND WATERWAYS



- Watershed
- Waterway
- Lodi Planning Area
- Lodi City Limits



## Groundwater Resources

The Planning Area overlies the Eastern San Joaquin sub-basin of the greater San Joaquin Valley Groundwater Basin. Groundwater in the Planning Area is recharged by local precipitation and through percolation from surface waters. The Mokelumne River is the primary source of groundwater recharge in the Planning Area. The city of Lodi, as well as the entire Central Valley, is underlain by a vast thickness of alluvium that was derived from surrounding mountains, transported by the Mokelumne River and other streams, and deposited in shallow seas of river floodplains. This alluvium is now saturated below a relatively shallow depth. Thus, the sedimentary layers underlying the Planning Area are a part of the major aquifer system that extends throughout the Central Valley from Red Bluff to Bakersfield.<sup>11</sup>

## Groundwater Quality

### *Contaminants*

As the primary source of water supply for the city of Lodi, any potential water quality issues can seriously threaten the city's water supply. The four primary contaminants of concern are Dibromochloropropane (DBCP), Methyl-Tert-Butyl-Ether (MTBE), Tetra-chloroethylene (PCE), and Trichloroethylene (TCE).

<sup>11</sup> Department of Water Resources, 2006.

Several of the City's wells are equipped with chlorination equipment intended to release controlled amounts of chlorine to help purify the water supply in the event of an emergency. Six of the City's wells utilize granular activated carbon to remove DBCP from the water. MTBE, PCE, and TCE have affected the groundwater supply to a lesser extent than DBCP. While PCE and TCE have been detected in some of the City's wells, the wells are still compliant with drinking water standards. Efforts to clean up the contamination are underway.<sup>12</sup>

### *Overdraft*

Over the past 40 years, pumping for municipal and industrial uses in eastern San Joaquin County has exceeded the basin's sustainable yield. This has caused groundwater elevations to decline at an average rate of 1.7 feet per year and has dropped by as much as 100 feet in some areas. Groundwater overdraft has reduced storage in the basin by as much as two million acre feet and caused groundwater depressions in the sub-basin east of Lodi. Overdrafting has the potential to decrease the water quality in the groundwater basin by allowing saltwater from the Delta to move into the basin underlying the western portion of the Planning Area.<sup>13</sup>

<sup>12</sup> City of Lodi, 2006.

<sup>13</sup> Department of Water Resources, 2006.



Lodi Lake.

## 7.6 ENERGY AND CLIMATE CHANGE

This section describes climate change and its potential impacts on the city and region. It provides an overview of the energy and mineral resource sector, including the city's contributions to global climate change (GCC) and its energy conservation efforts to try to reduce greenhouse gas (GHG) emissions and the rate of GCC. Air quality is discussed separately, in Section 7.7, but also has a direct impact on GHG emissions, GCC, public health, and overall quality of life.

Although, oil, gas and mineral resources have been mined previously in the county and even within the Planning Area, currently there are no significant resources or extraction operations in the Planning Area.

### Global Climate Change

#### Greenhouse Gases

The Earth's atmosphere is naturally composed of gases that act like the glass panes of a greenhouse, retaining heat to keep the temperature of the Earth stable and hospitable for life at an average temperature of 60°F. Recently, elevated concentrations of these gases in the atmosphere have had a destabilizing effect on the global climate, fueling the phenomenon commonly referred to as GCC. GCC is defined as a change in the average weather of the earth that may be measured by wind patterns, storms, precipitation, and temperature. (See Section 2.7 for a detailed description of GHG emissions sources.)

#### Potential Impacts

According to the California Climate Action Team, accelerating GCC has the potential to cause a number of adverse impacts in California, including but not limited to: shrinking Sierra snowpack that would threaten the state's water supply; public health threats caused by higher temperatures and more smog; damage to agriculture and forests due to reduced water storage capacity, rising temperatures, increasing salt water intrusion, flooding, and pest infestations; critical habitat modification and destruction; eroding coastlines; increased

wildfire risk; and increased electricity demand. The IPCC predicts that global mean temperature increase from 1990-2100 could range from 2.0 to 11.5 °F. It projects a sea level rise of seven to 23 inches by the end of the century, with a greater rise possible depending on the rate of polar ice sheet melting. Just as GCC is a result of the cumulative impact of billions of actions at many levels, including the local and individual levels, the solution to GCC requires taking action at each of these levels.

### State Regulations

State regulations offer direction and regional and local goals and policy measures.

#### Executive Order S-3-05

Executive Order S-3-05, signed on June 1, 2005, recognized California's vulnerability to climate change, noting that increasing temperatures could potentially reduce snow pack in the Sierra Nevada, which is a primary source of the State's water supply. Additionally, according to this Order, climate change could influence human health, coastal habitats, microclimates, and agricultural yield. The Order set the GHG reduction targets for California: by 2010, reduce GHG emissions to 2000 levels; by 2020 reduce GHG emissions to 1990 levels; by 2050 reduce GHG emissions to 80 percent below 1990 levels.

#### California Global Warming Solutions Act of 2006

Assembly Bill (AB) 32 outlines measures by which the State and its businesses and residents can reduce heat-trapping emissions from a variety of sources, including mobile sources and stationary sources such as power plants and refineries. In addition to setting a binding limit on greenhouse gas emissions, AB 32 requires the California Air Resources Board (CARB), the State Energy Resources Conservation and Development Commission, and the California Climate Action Registry to jointly administer State policy specific to global warming issues.

In addition, AB 32 requires CARB to institute a mandatory emissions reporting and tracking system to

monitor compliance with the emissions limit. To that end, CARB adopted a scoping plan in December 2008 to guide the development of detailed regulations in accordance with AB 32. This plan includes local government targets to reduce emissions by 15% by 2020 over 2008 levels. GHG rules and market mechanisms adopted by CARB will take effect and are legally enforceable beginning in 2012. As a result, the plan seeks to limit GHG emissions to reduce global warming pollution by 145 million tons by 2020 or to 25 percent below forecasted emissions (reduced to 1990 levels by 2020).

### **Senate Bill 375**

Senate Bill (SB) 375 (Chapter 728, Statutes of 2008) links transportation and land use planning with the CEQA process to help achieve the GHG emission reduction targets set by AB 32. Regional transportation planning agencies are required to include a sustainable community strategy (SCS) in regional transportation plans. The SCS must contain a planned growth scenario that is integrated with the transportation network and policies in such a way that it is feasible to achieve AB 32 goals on a regional level. SB 375 also identifies new CEQA exemptions and stream lining for projects that are consistent with the SCS and qualify as Transportation Priority Projects.

## **Local Energy Resources and Conservation Efforts**

### **Sources and Service Providers**

Electrical service to the city is provided by the Lodi Electric Utility. The Lodi Electric Utility is a customer-owned and City-operated utility that provides electrical services for residential, commercial, and industrial customers in the city.

Since 1968, the Lodi Electric Utility has been a member of the Northern California Power Agency (NCPA), which is a California Joint Powers Authority comprised of seventeen public utilities. Through NCPA, Lodi Electric Utility is able to obtain electricity at cost, facilitating low energy prices for customers. The NCPA owns and operates a variety of electric generation

facilities, such that the Lodi has access to a variety of energy sources. In 2007, 53% of the city's power came from renewable energy sources, primarily geothermal and small and large hydroelectric; natural gas (29%) and coal (18%) composed the remaining power sources.<sup>14</sup>

Natural gas service for the Planning Area is provided by Pacific Gas and Electric Company (PG&E) and is piped from gas fields in Tracy and Rio Vista.

### **Energy and Mineral Resources**

Natural gas extraction used to be common within the Planning Area, but most wells are no longer in use. As of 2005, there were only 74 active wells in the county producing approximately 9,600,000 million cubic feet of natural gas.<sup>15</sup> Locally, the Lodi Gas field is located approximately one mile north of the northeastern corner of the Planning Area, buffered by agricultural land. Lodi Gas Storage, LLC utilizes wells in this field for gas storage. The 1,450-acre field was originally determined to be depleted in 1972. However, there are still large pockets of gas in two reservoirs. These reservoirs are now used to store gas, which is transported via a 33-mile long pipeline that runs along Acampo Road, the northern boundary of the Planning Area, from Lower Sacramento Road to Interstate-5. The pipeline connects the storage facility with two PG&E connections east of the Planning Area.<sup>16</sup>

The Planning Area does not contain significant mineral resources. The California Geological Survey's (formerly the Division of Mines and Geology) Special Report 160 identifies the classification of aggregate resources within the Stockton-Lodi Production-Consumption Region. According to this report, the Planning Area is designated as MRZ-1, meaning it is highly unlikely to contain significant mineral resources.<sup>17</sup>

<sup>14</sup> City of Lodi, Electric Utility Department. "Power Content Label: Actual Power Mix 2007." <http://lodieletric.com/about/powercontent.php>

<sup>15</sup> California Department of Conservation, Division of Oil, Gas, and Geothermal Resources. Annual Report of the State Oil and Gas Supervisor, 2006.

<sup>16</sup> Jones and Stokes, 1999.

<sup>17</sup> California Division of Mines and Geology. Mineral Land Classification of Portland Cement Concrete Aggregate in the Stockton-Lodi Production-Consumption Region, Special Report 160. 1988.

## Energy Conservation

Reducing the carbon content of the fuel source and overall energy consumption can reduce GHG emissions and limit the negative impacts of GCC. The City currently administers and implements a variety of local energy conservation and waste reduction programs, including:

- Low-voltage LED lighting equipment in traffic signals.
- Solar assisted equipment at all new bus shelters/stops.
- Curbside recycling (which has allowed the city to meet the California Integrated Waste Management Act of 1989 requirement to divert at least 50% of waste from landfills).
- Energy education programs for children and students.
- Standards for photovoltaic panel installation.
- Lighting, heating, solar, and air conditioning rebate programs for residential and non-residential customers through the City's Electric Utility.

The General Plan seeks to reduce energy consumption through conservation efforts and renewable energy sources, as well as through land use, transportation, water, and green building and construction strategies, discussed elsewhere in the Plan.

## 7.7 AIR QUALITY

Good air quality is essential for protecting public health, ensuring a high quality of life, and maintaining a low rate of GHG emissions. However, located in the San Joaquin Valley Air Basin (SJVAB), Lodi is subject to air quality problems due to the SJVAB's unique topography and weather patterns. Therefore, a review of existing air quality sources and strategy for improvement is an essential component of the General Plan.

This section complies with AB 170 (an update to Government Code Section 65302.1) by providing existing conditions data (including attainment, and standards); local, district, state, and federal programs and regulations; and a comprehensive set of guiding and implementing policies. General Plan policy measures seek to reduce air quality impacts, in order to improve public health, reduce GHG emissions and enhance overall quality of life.

### Climate and Atmospheric Conditions

Air pollutant emissions overall are fairly constant throughout the year, yet the concentrations of pollutants in the air vary from day to day and even hour to hour. This variability is due to complex interactions of weather, climate, and topography. These factors affect the ability of the atmosphere to disperse pollutants. Conditions that move and mix the atmosphere help disperse pollutants, while conditions that cause the atmosphere to stagnate allow pollutants to concentrate. Local climatological effects, including topography, wind speed and direction, temperature, inversion layers, precipitation, and fog can exacerbate the air quality problem in the SJVAB.

### San Joaquin Valley Air Basin

The SJVAB is approximately 250 miles long and averages 35 miles wide, and is the second largest air basin in the state. The SJVAB is defined by the Sierra Nevada in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley



opens to the sea at the Carquinez Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. The San Joaquin Valley (Valley), thus, could be considered a “bowl” open only to the north.

### Wind Conditions and Air Pollutants

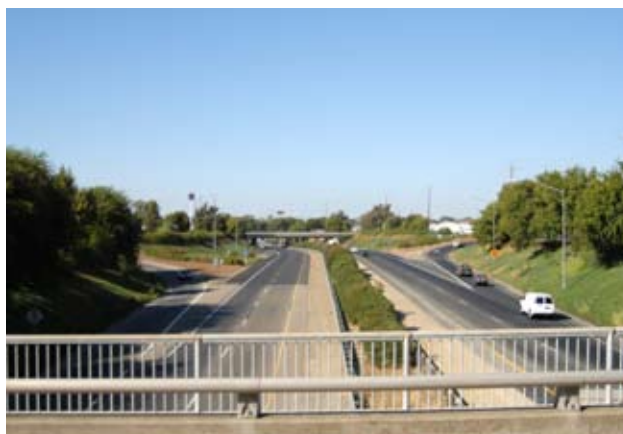
During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the Valley and flows in a south-southeasterly direction through the Valley, through Tehachapi pass, into the Southeast Desert Air Basin. In addition, the Altamont Pass also serves as a funnel for pollutant transport from the San Francisco Bay Area Air Basin into the region.

During the winter, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a north-northwesterly direction. Also during the winter months, the Valley generally experiences light, variable winds (less than 10 mph). Low wind speeds, combined with low inversion layers in the winter, create a climate conducive to high carbon monoxide (CO) and respirable and fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>, respectively) concentrations.

### Climate

The SJVAB has an “Inland Mediterranean” climate averaging over 260 sunny days per year. The valley floor is characterized by warm, dry summers and cooler winters. For the entire Valley, high daily temperature readings in summer average 95°F. Temperatures below freezing are unusual. Average high temperatures in the winter are in the 50s, but highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. The average daily low temperature is 45°F.

The vertical dispersion of air pollutants in the Valley is limited by the presence of persistent temperature inversions. Solar energy heats up the Earth’s surface, which in turn radiates heat and warms the lower atmosphere. Therefore, as altitude increases, the air temperature usually decreases due to increasing distance from the source of heat. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface or at any height above the ground, and tend to act as a lid on the Valley, holding in the pollutants that are generated here.



Cars and trains emit greenhouse gases, contributing to air quality impacts in the region.

## Policies, Programs, and Regulations

### Federal

At the federal level, the Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. The EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The federal CAA was first signed into law in 1963. Congress substantially amended the federal CAA in 1970, 1977, and 1990. The EPA sets federal standards for vehicle and stationary sources and provides research and guidance in air pollution programs.

#### *Federal Clean Air Act*

The federal CAA required the EPA to set National Ambient Air Quality Standards (NAAQS) for several problem air pollutants on the basis of human health and welfare criteria. The federal CAA requires air quality plans to include measures necessary to achieve these standards and requires that all City plans, programs and projects that require federal approval (including regional transportation plans), conform to air quality plans. Sanctions will apply if feasible measures are not expeditiously adopted.

Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare (e.g., crops, forests, materials, visibility, etc.). Primary NAAQS have been established for the following criteria air pollutants: CO, ozone (O<sub>3</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb).

All of the above, except CO, also have some form of secondary standard. The primary NAAQS standards are intended to protect, within an adequate margin of safety, those persons most susceptible to respiratory distress, such as people suffering from asthma or other illness, the elderly, very young children, or others engaged in strenuous work or exercise.

#### *Transportation Funding and Programs*

In addition to setting health-based standards for air pollutants, the EPA also oversees state and local actions to

improve air quality. The Intermodal Surface Transportation Efficiency Act requires transportation projects to not impact the ability to attain air quality standards and requires demonstration of expeditious implementation of Transportation Control Measures (TCM). In addition, Federal Transportation Funding Reauthorization provides funding for transportation projects that enhance air quality and for expeditious implementation of TCMs included in air quality plans.

### State

States are required to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the EPA. States may also establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to Health and Safety Code Section 39606(b) and its predecessor statutes.

The California Legislature established CARB in 1967. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA) of 1988. Other CARB duties include monitoring air quality in conjunction with air monitoring networks maintained by air pollution control districts (APCDs) and air quality management districts (AQMDs), establishing CAAQS (which are more stringent than the NAAQS in many cases), setting emissions standards for new motor vehicles, and reviewing district input for the State Implementation Plan (SIP) required by the federal CAA amendments. The SIP consists of the emissions standards for vehicular sources set by the ARB as well as attainment plans adopted by the APCD or AQMD and approved by the ARB, with objective of attain the NAAQS.

The State of California, through the CARB and Bureau of Automotive Repair, develops programs to reduce pollution from vehicles and consumer products. The following list provides a brief explanation of important regulations set forth by the State of California.

### *California Clean Air Act*

The CCAA provides a planning framework for attainment of the CAAQS for ozone, CO, SO<sub>2</sub>, and NO<sub>2</sub>. The CCAA classifies ozone nonattainment areas as moderate, serious, severe, and extreme based on severity of violation of state ambient air quality standards. For each class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. Air districts responsible for air basins with air quality that is in violation of CAAQS for ozone, CO, SO<sub>2</sub>, and NO<sub>2</sub> are required to prepare an air quality attainment plan that lays out a program to attain the CCAA mandates.

The CCAA requires all feasible control measures, including TCM, to reduce emissions; provides for indirect source programs in attainment plans; and contains targets for emission reductions, vehicle miles traveled, and average vehicle ridership.

### *Assembly Bill 170*

In adding Section 65302.1 to the Government Code, AB 170 requires cities and counties in the Valley to incorporate strategies to improve air quality in their general planning efforts.

### *Senate Bill 709*

Senate Bill 709 adds Chapter 5.7 to Part 3 of Division 26 of the Health and Safety Code, giving the San Joaquin Valley Air Pollution Control District (SJVAPCD) more responsibility in terms of permitting, fee implementation, and agricultural assistance, but also gives the District the authority to require the use of best available control technology for existing sources, promote cleaner-burning alternative fuels, and encourage and facilitate ridesharing. It also adds Section 9250.16 to the Vehicle Code to allow the District to adopt a surcharge on motor vehicle registration fees.



Using renewable energy resources, such as solar, and planting trees can help reduce air quality impacts and ensure the health and safety of the community.

### *California Government Code Section 65089*

This section of the Government Code requires trip reduction and travel demand management in Congestion Management Programs.

### **Regional**

Air pollution does not follow political boundaries. Therefore, many air quality problems are best managed on a regional basis. In 1991, the State Legislature determined that management of an air basin by a single agency would be more effective than management through each county within that basin. Air basins are geographic areas sharing a common “air-shed.” Most major metropolitan areas in California now fall under the authority of multi-county APCDs or AQMDs.

Air districts have the primary responsibility for control of air pollution from all sources other than direct motor vehicle emissions, which are the responsibility of CARB and EPA. Air districts adopt and enforce rules and regulations to achieve state and federal ambient air quality standards and enforce applicable state and federal law.

### *San Joaquin Valley Air Pollution Control District*

The SJVAPCD has jurisdiction over air quality matters in the SJVAB. Until the passage of the CCAA, the primary role of county APCDs was controlling stationary sources of pollution, such as industrial processes and equipment. With the passage of the CCAA and federal CAA amendments, air districts were required to implement transportation control measures and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for air districts to work closely with cities, counties, and regional transportation planning agencies to develop new programs.

The SJVAPCD entered into a memorandum of understanding with the transportation planning agencies of the eight counties in the SJVAB in 1992. This memorandum of understanding ensures a coordinated approach in the development and implementation of transportation plans throughout the Valley. This action has helped the Regional Transportation Planning Agencies comply

with pertinent provisions of the federal and state Clean Air Acts as well as related transportation legislation (such as the Intermodal Surface Transportation Efficiency Act).

The SJVAPCD develops plans and implements control measures in an effort to advance Valley attainment of CAAQS and NAAQS. The District has developed plans to attain state and federal standards for ozone and particulate matter. The SJVAPCD’s air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and make sure that the Valley will meet air quality goals on time. The SJVAPCD Governing Board approved three major plans in 2007-2008:

### *2007 Ozone Plan*

This plan includes an in-depth analysis of all possible control measures and projected that the Valley will achieve the 8-hour ozone standard (as set by EPA in 1997) for all areas of the SJVAB no later than 2023. This plan went above and beyond minimum legal requirements by including a “Fast Track” control strategy. Through Fast Track, new strategies produce real reductions (even though they cannot be legally counted in the plan at this time) and will clean the air before the deadline. The ARB approved the 2007 Ozone Plan on June 14, 2007.

### *2007 PM<sub>10</sub> Plan*

The SJVAPCD has compiled a series of PM<sub>10</sub> plans, with the first one in 1991. Based on PM<sub>10</sub> measurements from 2003-2006, EPA found that the SJVAB had reached the federal PM<sub>10</sub> standard. The SJVAPCD’s 2007 PM<sub>10</sub> Maintenance Plan assures that the Valley will continue to meet the PM<sub>10</sub> standard and requests that EPA formally redesignate, or label, the Valley to attainment status. On April 5, 2008, EPA stated their intent to approve the PM<sub>10</sub> Maintenance Plan.



### *2008 PM<sub>2.5</sub> Plan*

Building upon the strategy used in the 2007 Ozone Plan, the SJVAPCD agreed to additional control measures to reduce directly produced PM<sub>2.5</sub>. The 2008 PM<sub>2.5</sub> Plan estimates that the SJVAB will reach the PM<sub>2.5</sub> standard (as set by EPA in 1997) in 2014. The ARB approved the Plan on May 22, 2008, and the plan has been submitted to EPA.

### *District Tools*

The SJVAPCD has prepared guidance documents to aid agencies in performing environmental reviews. The documents are briefly described below:

- **Air Quality Guidelines for General Plans (AQGGP):** The AQGGP is a guidance and resource document for cities and counties to use to address air quality in their general plans. The AQGGP includes goals, policies, and programs to reduce vehicle trips, reduce miles travelled, and improve air quality.
- **Guideline for Assessing and Mitigating Air Quality Impacts (GAMAQI):** The GAMAQI is an advisory document, that provides Lead Agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents.
- **Environmental Review Guideline (ERG):** The ERG fulfills CEQA requirements for agencies to adopt procedures and guidelines for implementing CEQA. The document is intended to guide District staff in carrying out CEQA and to assure the public that environmental impacts related to District actions are thoroughly and consistently addressed.
- **Transportation Infrastructure:** The federal CAA amendments require transportation plans to conform to the air quality goals of the SIP. This means that states must assure that transportation programs do not undermine the attainment of air quality standards. The Regional Transportation Planning Agencies are responsible for making the conformity finding. The Air District's role in this process is one of consultation.

- **Air Quality Programs:** The CCAA allows air districts to delegate the implementation of transportation control measures to any local agency as long as the following conditions are met: (1) the agency must submit an implementation plan to the district for approval; (2) the agency must adopt and implement measures at least as stringent as those in the district's plan; and (3) the district must adopt procedures for reviewing the performance of the local agency in implementing the measures.

### *San Joaquin Council of Governments*

In addition, SJCOG is expected to take on a collaborative role in climate change and air quality planning, as a result of SB 375. As the region's metropolitan planning organization, SJCOG will be required to prepare an SCS to reduce vehicle miles traveled in the regions and demonstrate the ability for the region to attain CARB's targets. (See Section 2.6, for details on SB 375 and related bills). CARB is expected to finalize targets by September 2010.

### **Local**

Local government's responsibility for air quality increased significantly with the passage of the CCAA and the federal CAA amendments. The SJVAPCD is required to address state air quality standards by way of TCMs and indirect source programs in its air quality attainment plans; but, cities and counties, through their Councils of Government, are responsible for most implementation.

Local government responsibilities for air quality include:

1. **Land use planning:** the data, analysis, and the guiding and implementing policies identified in this General Plan;
2. **Environmental Review:** reviewing and mitigating the environmental impacts of development projects;
3. **Transportation:** developing and maintaining the transportation infrastructure in the community, including transit systems and bicycle networks;

4. Local programs: implementing local air quality programs such as commute-based trip reduction and rideshare.
5. GHG emissions reduction: reducing emissions, pursuant to AB 32 and SB 375, as regional targets are defined by CARB and local targets by SJCOG.

## Attainment Status

CARB and the EPA have established criteria air pollution standards in an effort to protect human health and welfare. Geographic areas are deemed “attainment” if these standards are met or nonattainment if they are not met. Nonattainment status is classified by the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious.

The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan for the nonattainment area and impose additional control measures.

At the federal level the District is currently designated as serious nonattainment for the 8-hour ozone standard, attainment for PM<sub>10</sub> and CO, and nonattainment for PM<sub>2.5</sub>. A new finding of “extreme” nonattainment with the 8-hour ozone standard is currently pending, and is expected to be approved by the federal EPA in 2009. At the state level the District is designated as nonattainment for the 8-hour ozone, PM<sub>10</sub>, and PM<sub>2.5</sub> standards.

## Existing Emission Sources and Emission Levels

### Criteria Pollutants

In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere. Air pollution in the Valley results from emissions generated in the Valley as well as from emissions and secondary pollutants transported into the Valley. It is thought that the bulk of the Valley’s summer and winter air pollution is caused by locally generated emissions. Due to the Valley’s meteorology, topography, and the chemical composition of the air pollutants, NO<sub>x</sub> is the primary culprit in the formation of both ozone and PM<sub>2.5</sub>.

The SJVAPCD’s Annual Report to the Community, October 2008 provides a brief discussion of sources of air pollution and identifies the top sources of emissions in the SJVAB, as shown in Table 7-7.

**TABLE 7-7: TOP 10 SOURCES CRITERIA POLLUTANT EMISSIONS**

NOX	VOC	PM2.5
Heavy Heavy-Duty Diesel Trucks	Farming Operations	Managed Burning and Disposal
Off-Road Equipment	Oil and Gas Production	Residential Fuel Combustion
Farm Equipment	Consumer Products	Farming Operations
Trains	Pesticides/Fertilizers	Heavy Heavy-Duty Diesel Trucks
Medium Heavy Duty Diesel Trucks	Light Duty Passenger Vehicles	Fugitive Windblown Dust
Light Duty Passenger Vehicles	Heavy Heavy-Duty Diesel Trucks	Paved Road Dust
Light Duty Trucks – LDT2	Off-Road Equipment	Unpaved Road Dust
Food and Agricultural Processing	Recreational Boats	Cooking
Oil and Gas Production	Light Duty Trucks – LDT2	Off-Road Equipment
Medium Duty Trucks	Food and Agriculture	Chemical Industrial Processes

Source: San Joaquin Valley Air Pollution Control District, 2008.

## Greenhouse Gases

GHGs are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. There are no "attainment" concentration standards established by the federal or state government for greenhouse gases. In fact, GHGs are not generally thought of as traditional air pollutants because greenhouse gases, and their impacts, are global in nature, while air pollutants affect the health of people and other living things at ground level, in the general region of their release to the atmosphere<sup>18</sup>. Common GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ozone (O<sub>3</sub>), and chlorofluorocarbons (CFCs). Some greenhouse gases occur naturally and are emitted to the atmosphere through both natural processes and human activities. Other GHGs are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and fluorinated carbons.

## Emission Levels

The SJVAPCD's regional air quality monitoring network provides information on existing ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. Table 7-8 presents a five-year summary of air pollutant (concentration) data collected at the three monitoring stations in the vicinity of the project area on Hazelton Street, East Mariposa Road, and at the Wagner-Holt School in Stockton. The Hazelton Street station measures concentrations of all air pollutants, including the two for which the SJVAB remains "nonattainment", ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. The East Mariposa Road Station measures ozone concentrations only and has not been collecting data for the last four years. The Wagner-Holt School Station measures PM<sub>10</sub> concentrations only. Pollutant concentrations measured at these stations should be representative of background air pollutant concentrations at or near the

Planning Area. These measured air pollutant concentrations are then compared with state and national ambient air quality standard.

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<sup>18</sup> In April 2007, the U.S. Supreme Court concluded (*Massachusetts v. EPA*) that GHGs meet the CAA definition of an air pollutant, and are thus subject to regulation by EPA.

**TABLE 7–8: SUMMARY OF MONITORING DATA FOR THE NEAREST STATIONS TO THE PLANNING AREA 2002–2006**

POLLUTANT	STATE STANDARD	NATIONAL STANDARD	POLLUTANT CONCENTRATION BY YEAR <sup>1</sup>				
			2002	2003	2004	2005	2006
Highest 1-hour average, ppm <sup>2</sup>	0.09	NA	0.102	0.104	0.096	0.099	0.109
Days over State Standard			2	3	1	3	6
Days over National Standard			0	0	0	0	0
Highest 8-hour average, ppm	0.07c	0.08	0.081	0.088	0.080	0.086	0.092
Days over National Standard			0	1	0	1	3
Ozone (E Mariposa Road)							
Highest 1-hour average, ppm <sup>2</sup>	0.09	NA	0.108	NA	NA	NA	NA
Days over State Standard			5	NA	NA	NA	NA
Days over National Standard			0	NA	NA	NA	NA
Highest 8-hour average, ppm	0.07	0.08	0.086	NA	NA	NA	NA
Days over National Standard			1	NA	NA	NA	NA
PM10 (Hazelton Street)							
Highest 24-hour avg (µg/m <sup>3</sup> ) <sup>2</sup>	50	150	138.7	116.4	176.1	84.0	77.0
Est. Days over State Standard			58	17	18	47	N/A
Est. Days over National Standard			0	0	1	0	N/A
Annual average, µg/m <sup>3</sup>	20	50	36.1	28.4	29.4	29.8	N/A
PM10 (Wagner-Holt School)							
Highest 24-hour avg (µg/m <sup>3</sup> ) <sup>2</sup>	50	150	84.0	53.0	50.0	74.0	52.0
Est. Days over State Standard			39	20	0	18	N/A
Est. Days over National Standard			0	0	0	0	N/A
Annual average, µg/m <sup>3</sup>	20	50	30.6	22.8	22.4	23.1	N/A
PM2.5 (Hazelton Street)							
Highest 24-hour avg (µg/m <sup>3</sup> ) <sup>2</sup>	NA	65	64.0	45.0	41.0	63.0	46.2
Days over National Standard			0	0	0	0	0
Annual average, µg/m <sup>3</sup>	12	15	16.7	13.6	13.2	12.5	13.0
Carbon Monoxide (Hazelton Street)							
Highest 8-hour average, ppm	9.0	9	3.2	3.1	2.5	2.9	2.2
Days over Standard			0	0	0	0	0

NOTE: Bold values are in excess of applicable standard. NA = Not Applicable or Not Available.

1. Data was collected at the Hazelton Street monitoring station unless otherwise noted. The E Mariposa Road station monitors for ozone only.

2. ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter.

3. This concentration was approved by the Air Resources Board on April 28, 2005 and became effective May 17, 2006.

Source: California Air Resources Board, Summary of Air Quality Data, 2006b, Gaseous and Particulate Pollutants, 2002, 2003, 2004, 2005, and 2006 data are from the ARB web site at <www.arb.ca.gov/adam>.



## 7.8 POLICIES

### GUIDING POLICIES

- C-G1** Promote preservation and economic viability of agricultural land surrounding Lodi.
- C-G2** Maintain the quality of the Planning Area's soil resources and reduce erosion to protect agricultural productivity.
- C-G3** Protect sensitive wildlife species and their habitats.
- C-G4** Protect, restore and enhance local water-courses and associated plant, wildlife, and fish species, particularly in the Mokelumne River and floodplain areas.
- C-G5** Encourage the identification, protection, and enhancement of archaeological resources.
- C-G6** Preserve and enhance districts, sites, and structures that serve as significant, visible connections to Lodi's social, cultural, economic, and architectural history.
- C-G7** Promote community awareness and appreciation of Lodi's history, culture and architecture.
- C-G8** Protect and improve water quality in the Mokelumne River, Lodi Lake, and major drainage ways.
- C-G9** Conserve energy and reduce per capita energy consumption.
- C-G10** Reduce greenhouse gas emissions by 15% over 2008 levels by 2020, to slow the negative impacts of global climate change.
- C-G11** Support land use, transportation management, infrastructure, and environmental planning programs that reduce vehicle emissions and improve air quality.
- C-G12** Minimize the adverse effects of construction related air quality emissions and Toxic Air Contaminants on human health.

### IMPLEMENTING POLICIES

#### Agricultural and Soil Resources

- C-P1** Work with San Joaquin County and the City of Stockton to maintain land surrounding Lodi in agricultural use. Encourage the continuation of Flag City as a small free-way-oriented commercial node, with no residential uses.
- C-P2** Work with San Joaquin County and relevant land owners to ensure economic viability of grape growing, winemaking, and supporting industries, to ensure the preservation of viable agricultural land use.
- C-P3** Support the continuation of agricultural uses on lands designated for urban uses until urban development is imminent.
- C-P4** Encourage San Joaquin County to conserve agricultural soils, preserve agricultural land surrounding the City and promote the continuation of existing agricultural operations, by supporting the county's economic programs.
- C-P5** Ensure that urban development does not constrain agricultural practices or adversely affect the economic viability of adjacent agricultural practices. Use appropriate buffers consistent with the recommendations of the San Joaquin County Department of Agriculture (typically no less than 150 feet) and limit incompatible uses (such as schools and hospitals) near agriculture.
- C-P6** Require new development to implement measures that minimize soil erosion from wind and water related to construction and urban development. Measures may include:
  - Construction techniques that utilize site preparation, grading, and best management practices that provide erosion control and prevent soil contamination.
  - Tree rows or other windbreaks shall be used within buffers on the edge of urban development and in other areas as appropriate to reduce soil erosion.

**C-P8** Adopt an agricultural conservation program (ACP) establishing a mitigation fee to protect and conserve agricultural lands:

- The conservation easements and fee title acquisition of conservation lands shall be used for lands determined to be of statewide significance (Prime or other Important Farmlands), or sensitive and necessary for the preservation of agricultural land, including land that may be part of a community separator as part of a comprehensive program to establish community separators.
- The ACP shall encourage that conservation easement locations are prioritized as shown in Figure 7-5:
  - (A) the Armstrong Road Agricultural/Cluster Study area east of Lower Sacramento Road;
  - (B) the Armstrong Road Agricultural/Cluster Study area west of Lower Sacramento Road;
  - (C) elsewhere in the Planning Area, one mile east and west of the Urban Reserve boundaries respectively; and
  - (D) outside the Planning Area, elsewhere in San Joaquin County.

[illegible]

- The mitigation fees collected by the City shall be transferred to a farmland trust or other qualifying entity, which will arrange the purchase of conservation easements. The City shall encourage the Trust or other qualifying entity to pursue a variety of funding sources (grants, donations, taxes, or other funds) to fund implementation of the ACP.

## Biological Resources

- C-P5** Support the protection, preservation, restoration, and enhancement of habitats of State or federally-listed rare, threatened, endangered and/or other sensitive and special status species, and favor enhancement of contiguous areas over small segmented remainder parcels.
- C-P6** Continue to coordinate with the San Joaquin Council of Governments and comply with the terms of the Multi Species Habitat Conservation and Open Space Plan to protect critical habitat areas that support endangered species and other special status species.
- C-P7** Work with other agencies to ensure that the spread of invasive/noxious plant species do not occur in the Planning Area. Support efforts to eradicate invasive and noxious weeds and vegetation on public and private property.
- C-P8** Protect the river channel, pond and marsh, and riparian vegetation and wildlife communities and habitats in the Mokelumne River and floodplain areas. Prohibit any activity that will disturb bottom sediments containing zinc deposits in Mokelumne River, because such disturbance could cause fish kills. Prohibit activities that could disturb anadromous fish in the Mokelumne River during periods of migration and spawning.
- C-P9** Support the protection, restoration, expansion, and management of wetland and riparian plant communities along the Mokelumne River for passive recreation, groundwater recharge, and wildlife habitat.

- C-P10** Explore the purchase of or establishment of a joint agreement for open space preservation and habitat enhancement in the Woodbridge Irrigation District's property located north of the Mokelumne River. Ensure the open space preservation and enhancement of this property, while exploring opportunities for public access.

- C-P11** Site new development to maximize the protection of native tree species and sensitive plants and wildlife habitat. Minimize impacts to protect mature trees, Swainson's hawk, vernal pool tadpole shrimp, and any threatened, endangered or other sensitive species when approving new development. Mitigate any loss.

- C-P12** Work with the California Department of Fish and Game in identifying an area or areas suitable for Swainson's hawk and burrowing owl habitat. Preserve land through a mitigation land bank to mitigate impacts on existing habitat for these species. Establish a mechanism for developer funding for the acquisition and management of lands in the mitigation bank.

## Cultural Resources

- C-P13** For future development projects on previously un-surveyed lands, require a project applicant to have a qualified archeologist conduct the following activities: (1) conduct a record search at the Central California Information Center at the California State University, Stanislaus, and other appropriate historical repositories, (2) conduct field surveys where appropriate and required by law, and (3) prepare technical reports, where appropriate, meeting California Office of Historic Preservation Standards (Archeological Resource Management Reports).
- C-P14** In the event that archaeological/paleontological resources are discovered during site excavation, the City shall require that grading and construction work on the project site be suspended until the significance of the features can be determined

by a qualified archaeologist/paleontologist. The City will require that a qualified archeologist/paleontologist make recommendations for measures necessary to protect any site determined to contain or constitute an historical resource, a unique archaeological resource, or a unique paleontological resource or to undertake data recovery, excavation, analysis, and curation of archaeological/paleontologist materials. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.

- C-P15** If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
- The San Joaquin County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and
  - If the remains are of Native American origin: (1) the descendants of the deceased Native Americans have made a timely recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or (2) The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

## Historic Resources

- C-P16** Encourage the preservation, maintenance, and adaptive reuse of existing historic buildings by developing incentives for owners of historically-significant buildings to improve their properties.
- C-P17** Require that, prior to the demolition of a historic structure, developers offer the structure for relocation by interested parties.
- C-P18** Require that environmental review consistent with the California Environmental Quality Act be conducted on demolition permit applications for buildings designated as, or potentially eligible for designation as, historic structures.
- C-P19** Conduct a comprehensive survey of historic resources in Lodi, including consideration of potentially eligible historic resources. Update Figure 7-3 upon completion of the survey.

Designate a structure as historic if it:

- Exemplifies or reflects special elements of the city's cultural, architectural, aesthetic, social, economic, political, artistic, and/or engineering heritage;
- Is identified with persons, businesses, or events significant to local, State, or National history;
- Embodies distinctive characteristics of style, type, period, or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;
- Represents the notable work of a builder, designer, engineer, or architect; and/or
- Is unique in location or has a singular physical characteristic that represents a familiar visual feature of a neighborhood, community, or the city.

Designate a district as historic if it:

- Is a geographically definable area possessing a concentration or continuity of sites, buildings, structures, or objects as unified by past events or aesthetically by plan or physical development; or



- Identifies relevant key neighborhoods either as historic districts or merit districts. Designate accordingly if 50% of property owners in the proposed district agree to the designation.
- An “Historic District” means any area containing a concentration of improvements that has a special character, architectural importance, historical interest, or aesthetic value, which possesses integrity of location, design, setting, materials, workmanship, feeling, and association or which represents one or more architectural periods or styles typical to the history of Lodi.
- A “Merit District” recognizes a district’s history but does not provide for a regulatory structure at this time. The structures of these districts may not be architecturally significant, but the role that these neighborhoods have played in the city’s development, the cultural and economic conditions that resulted in the construction of these neighborhoods and the stories surrounding them make them an important part of the city’s history for which they should be acknowledged and celebrated.

**C-P20** Follow preservation standards outlined in the current *Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*, for structures listed on the National Register of Historic Places or California Register of Historical Resources.

**C-P21** Coordinate historic preservation efforts with other agencies and organizations, including the Lodi Historical Society, San Joaquin County Historical Society and other historical organizations.

## Hydrology and Water Quality

*See Chapter 3: Growth Management and Chapter 6: Parks, Recreation, and Open Space for water-related policies that address water supply and conservation; and riparian areas within open spaces, respectively.*

**C-P22** Monitor water quality regularly to ensure that safe drinking water standards are met and maintained in accordance with State and EPA regulations and take necessary measures to prevent contamination. Comply with the requirements of the Clean Water Act with the intent of minimizing the discharge of pollutants to surface waters.

**C-P23** Monitor the water quality of the Mokelumne River and Lodi Lake, in coordination with San Joaquin County, to determine when the coliform bacterial standard for contact recreation and the maximum concentration levels of priority pollutants, established by the California Department of Health Services, are exceeded. Monitor the presence of pollutants and variables that could cause harm to fish, wildlife, and plant species in the Mokelumne River and Lodi Lake. Post signs at areas used by water recreationists warning users of health risks whenever the coliform bacteria standard for contact recreation is exceeded. Require new industrial development to not adversely affect water quality in the Mokelumne River or in the area’s groundwater basin. Control use of potential water contaminants through inventorying hazardous materials used in City and industrial operations.

**C-P24** Regularly monitor water quality in municipal wells for evidence of contamination from dibromochloropropane (DBCP), saltwater intrusion, and other toxic substances that could pose a health hazard to the domestic water supply. Close or treat municipal wells that exceed the action level for DBCP.

**C-P25** Minimize storm sewer pollution of the Mokelumne River and other waterways by maintaining an effective street sweeping and cleaning program.

- C-P26** Require, as part of watershed drainage plans, Best Management Practices, to reduce pollutants to the maximum extent practicable.
- C-P27** Require all new development and redevelopment projects to comply with the post-construction Best Management Practices (BMPs) called for in the Stormwater Quality Control Criteria Plan, as outlined in the City's Phase 1 Stormwater NPDES permit issued by the California Water Quality Control Board, Central Valley Region. Require that owners, developers, and/or successors-in-interest to establish a maintenance entity acceptable to the City to provide funding for the operation, maintenance, and replacement costs of all post-construction BMPs.
- C-P28** Require, as part of the City's Storm Water NPDES Permit and ordinances, the implementation of a Grading Plan, Erosion Control Plan, and Pollution Prevention Plan during the construction of any new development and redevelopment projects, to the maximum extent feasible.
- C-P29** Require use of stormwater management techniques to improve water quality and reduce impact on municipal water treatment facilities.
- C-P30** Protect groundwater resources by working with the county to prevent septic systems in unincorporated portions of the county that are in the General Plan Land Use Diagram, on parcels less than two acres.
- C-P31** Reduce the use of pesticides, insecticides, herbicides, or other toxic chemical substances by households and farmers by providing education and incentives.

## Energy and Climate Change

- C-P32** Prepare and adopt a comprehensive climate action plan (CAP). The CAP should include the following provisions:
- An inventory of citywide greenhouse gas emissions,
  - Emissions targets that apply at reasonable intervals through the life of the CAP,
  - Enforceable greenhouse gas emissions control measures,
  - A monitoring and reporting program to ensure targets are met, and
  - Mechanisms to allow for revision of the CAP, as necessary.
- C-P33** Promote incorporation of energy conservation and weatherization features into existing structures. Update the Zoning Ordinance and make local amendments to the California Building Code, as needed, to allow for the implementation of green building, green construction, and energy efficiency measures.
- C-P34** Encourage the development of energy efficient buildings and communities. All new development, including major rehabilitation, renovation, and redevelopment projects, shall incorporate energy conservation and green building practices to the maximum extent feasible and as appropriate to the project proposed. Such practices include, but are not limited to: building orientation and shading, landscaping, and the use of active and passive solar heating and water systems. The City may implement this policy by adopting and enforcing a Green Building Ordinance.
- C-P35** Reduce energy consumption within City government facilities and motor fleets.
- C-P36** Encourage the use of passive and active solar devices such as solar collectors, solar cells, and solar heating systems into the design of local buildings. Promote voluntary participation in incentive programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.

**C-P37** Work with the California Energy Commission and other public and non-profit agencies to promote the use of programs that encourage developers to surpass Title 24 Energy Efficiency standards by utilizing renewable energy systems and more efficient practices that conserve energy, including, but not limited to natural gas, hydrogen or electrical vehicles. Offer incentives such as density bonus, expedited process, fee reduction/waiver to property owners and developers who exceed California Title 24 energy efficiency standards.

**C-P38** Develop, adopt, and implement a heat island mitigation plan to reduce carbon dioxide emissions, smog, and the energy required to cool buildings. This plan should contain requirements and incentives for the use of cool roofs, cool pavements, and strategic shade tree placement, all of which may result in as much as 6-8° F temperature decrease from existing conditions.

**C-P39** Encourage the planting of shade trees along all City streets and residential lots (but, particularly in areas that currently lack street trees) to reduce radiation heating and greenhouse gases. Develop a tree planting informational packet to help future residents understand their options for planting trees.

**C-P40** Promote public education energy conservation programs that strive to reduce the consumption of natural or human-made energy sources.

**C-P41** Post and distribute hard-copy and electronic information on currently available weatherization and energy conservation programs.

## Air Quality

*See Chapter 2: Land Use, Chapter 4: Community Design and Livability, and Chapter 5: Transportation for related policies that seek to improve air quality and reduce emissions through land use, transportation, and urban design strategies.*

**C-P42** Require all construction equipment to be maintained and tuned to meet appropriate EPA and CARB emission requirements and when new emission control devices or operational modifications are found to be effective, such devices or operational modifications are to be required on construction equipment.

**C-P43** Continue to require mitigation measures as a condition of obtaining permits to minimize dust and air emissions impacts from construction.

**C-P44** Require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to:

- Site watering or application of dust suppressants;
- Phasing or extension of grading operations;
- Covering of stockpiles;
- Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour); and
- Revegetation of graded areas.

**C-P45** Cooperate with other local, regional, and State agencies in developing and implementing air quality plans to achieve State and Federal Ambient Air Quality Standards and address cross-jurisdictional and regional transportation and air quality issues.

**C-P46** Use the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guide for Assessing and Mitigating Air Quality Impacts for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents. The City shall consult with the

SJVAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVAPCD is on the distribution list for all CEQA documents.

**C-P47** Support recommendations to reduce air pollutants found in the San Joaquin Valley Air Pollution Control District (SJVAPCD) local attainment plans and use its regulatory authority to mitigate “point” sources of air pollution (e.g., factories, power plants, etc.).

**C-P48** Ensure that air quality impacts identified during the project-level CEQA review process are fairly and consistently mitigated. Require projects to comply with the City’s adopted air quality impact assessment and mitigation process, and to provide specific mitigation measures as outlined in policies of Chapter 5: Circulation.

**C-P49** Assess air quality mitigation fees for all new development, with the fees to be used to fund air quality programs.

**C-P50** Require the use of natural gas or the installation of low-emission, EPA-certified fireplace inserts in all open hearth fireplaces in new homes. Promote the use of natural gas over wood products in space heating devices and fireplaces in all existing and new homes. Follow the guidelines set forth in San Joaquin Valley Air Pollution Control District’s Rule 4901.

**C-P51** Review, support, and require implementation (as applicable) of San Joaquin Valley Air Pollution Control District guidance and recommendations (including those identified in the Guide for Assessing and Mitigating Air Quality Impacts) in regards to several key issues including:

- Environmental Assessment;
- Air Quality Mitigation Agreements;
- Integrated Planning;
- Air Quality Education;
- Congestion Management/Transportation Control Measures;
- Toxic and Hazardous Pollutant Emissions;

- Fugitive Dust and PM10 Emissions; and
- Energy Conservation and Alternative Fuels.

**C-P52** Require new sensitive uses proposed to be located within 500 feet of high volume traffic routes where daily vehicle counts exceed 100,000, to use an HVAC system with filtration to reduce/mitigate infiltration of vehicle emissions as warranted by exposure analysis.

**C-P53** Require industrial development adjacent to residential areas to provide buffers and institute setback intended to ensure land use compatibility in regards to potential Toxic Air Contaminant exposure.





The Safety Element identifies the natural and manmade hazards that exist within the city. It seeks to mitigate their potential impacts, through both preventative and response measures, to ensure the continued health and safety of Lodi community members.

This Element addresses flooding and drainage; potentially hazardous materials and operations; seismic and geologic hazards; fire hazards; and emergency management. Potential health hazards related to air quality are addressed in Chapter 7: Conservation. Storm drain infrastructure related to flooding and drainage is discussed in Chapter 3: Growth Management and Infrastructure.

## 8.1 FLOODING AND DRAINAGE

### Flood Zones

Based on revised flood risk evaluations prepared by the Federal Emergency Management Agency (FEMA) for the City of Lodi and San Joaquin County, effective October 19, 2009, flood hazards are a constraint to development only in two areas of the city: the area immediately adjacent to the Mokelumne River along the city's northern boundary, and the area around the White Slough Water Pollution Control Facility, the City's wastewater treatment facility, in the southwest corner of the Planning Area. As shown on Figure 8-1, these areas lie within Zone AE, meaning that they are subject to a 1% annual (100-year) flood. Flooding depths in this area are generally greater than three feet. No new development is planned within either of these areas.

Most of the city and the Planning Area lie within Zone X, which describes lands subject to the 0.2% annual (500-year) flood zone or that lie within the 100-year flood zone, but with flooding depths less than one foot. This suggests that these areas have a low susceptibility to major flooding, but would be inundated during a 500-year flood event. The remaining portions of the city and Planning Area are classified as Zone X, meaning that they lie outside the 500-year flood zone.

### Dam Inundation

Large quantities of water stored in reservoirs along the Mokelumne, Calaveras, and Stanislaus River systems pose a potential threat to inhabitants of the Planning Area. Flooding could occur as a result of releases from reservoirs upstream of the Planning Area. Partial or complete failure of a dam along any of these rivers, especially the Mokelumne River, could cause inundation in the Planning Area. Dams that pose a direct threat to the Planning Area include Camanche, Camanche South and North Dikes, and Pardee Dam. The entire Planning Area would be inundated in the event of a failure of any of these dams, except for the Camanche North Dikes Dam, whose failure would just flood the Planning Area north of Kettleman Lane.



Drainage basins (top), Lodi Lake (middle), and the Woodbridge Irrigation Canal (bottom) help to drain stormwater.

Map of the City of Houston showing flood hazard areas. The map includes major roads like I-10, I-27, and I-69, and various local streets. Flood zones are color-coded: Zone AE (Special Flood Hazard Area) in light blue, Zone X (1% annual chance flood) in medium blue, Zone X (0.2% annual chance flood) in dark blue, and areas with average depths of less than 1 foot or with drainage areas less than 1 square mile in light purple. The map also shows city limits, urban reserve areas, and planning areas. A legend in the bottom right corner explains the symbols and colors. A scale bar and north arrow are also present.

Source: Federal Emergency Management Agency, 2009.  
Note: Flood Insurance Rate Maps are effective and regulatory as of October 16, 2009.

## Flood Protection

Berms along the Mokelumne River were privately built and vary in height. Upstream of SR-99, the adjacent agricultural lands are protected against floods up to the 50-year currents by low discontinuous berms. Berm overtopping here from larger flood events (e.g. the 100-year flood) would not, however, cause inundation in the Planning Area. Berms west of SR-99 are higher and provide protection from flows slightly greater than the 100-year event. Should a major storm event cause berms to be over topped or if a berm or dam fails, flooding would occur. Flooding can also occur when runoff exceeds the capacity of local systems and cannot drain adequately. As long as berms are not over-topped and maintain their structural integrity, flooding is considered to be very unlikely.

San Joaquin County has prepared a Dam Failure Plan that identifies hazards to the county from dams and reservoirs. The Dam Failure Plan also identifies actions that will be taken to respond to flood-related emergencies in the event that flooding occurs. These actions would include implementation of the Standardized Emergency Management System and the County's Multi-Hazard Emergency Plan (see Section 8.5: Emergency Management for details).<sup>1</sup>

Although major flooding is not anticipated, as existing agricultural and open space lands are converted to urban uses, there will be an increase in stormwater runoff from additional impervious surfaces. To minimize those impacts, General Plan policies seek to manage stormwater runoff, through the permitting process, good stormwater management practices (e.g. porous materials, cisterns, bioswales, etc.), and the construction of open spaces and drainage basins (see Chapter 6: Parks, Recreation, and Open Space).

## 8.2 POTENTIALLY HAZARDOUS MATERIALS AND OPERATIONS

This section focuses on human-made hazards associated with the exposure to hazardous materials, as well as fire, transportation, and utility corridor hazards. Hazardous wastes generated by both residents and businesses within the Planning Area contribute to environmental and human health hazards that have become an increasing public concern. However, proper waste management and disposal practices can minimize public concern over toxicity and the contamination of soils, water, and the air.

### Hazardous Materials

As of May 2009, the State Water Resources Control Board reported an inventory of Leaking Underground Storage Tanks (LUST) and other (non-fuel) cleanup sites. The majority of the LUST sites have been remediated, with only nine sites listed as still "open" for remediation, monitoring, or assessment. These sites are described in a table in Appendix XXX and shown in Figure 8-2.

The California Integrated Waste Management Board (CIWMB) is responsible for managing California's solid waste stream. The CIWMB works in partnership with local government, industry, and the public to reduce waste disposal and ensure environmentally safe landfills are maintained. Table 8-1 and Figure 8-2 describe solid waste, recycling, and landfills facilities (including closed facilities).

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<sup>1</sup> San Joaquin County, 2003.



**TABLE 8-1: SOLID WASTE AND/OR RECYCLING FACILITIES AND LANDFILL SITES IN THE PLANNING AREA**

SITE	ADDRESS
Solid Waste and Landfill	
Lodi City Landfill	N of Awani Dr and Mokelumne River Dr.
Central Valley Waste Services	1333 E. Turner Rd.
Valley Landscaping	1320 East Harney Ln.
Recycling Centers	
Pinos Recycling Co	741 S Cherokee Ln.
Tokay Recycling Center	60 S Cluff Ave.
Tomra Pacific Inc/Apple Market	1320 W Lockeford St.
Diaz Recycling	845 S Central Ave.
Nexcycle/Save Mart #209	610 W Kettleman Ln.
Tomra Pacific Inc/Food 4 Less	2430 W Kettleman Ln.
Nexcycle/Safeway #1648	2449 W Kettleman Ln.

Source: California Integrated Waste Management Board, 2007.



Plan policies seek to ensure the safe operation of storage tanks and potentially hazardous materials.



Lodi is served by three solid waste facilities and multiple recycling centers.

**Map of Stockton, California**

**Legend:**

- Leaking Underground Storage Tanks (LUST)
- Other Cleanup Sites
- Solid Waste Facilities and Landfill Sites
- Recycling Facilities
- Urban Reserve
- Sphere of Influence (2008)
- City Limits (2008)

**Scale:** 0 to 2 Miles

**Map Details:**

The map shows the City of Stockton, California, with major roads and the Mokelumne River. The Urban Reserve is indicated by a dashed line. The Sphere of Influence (2008) is shown with a dotted line, and the City Limits (2008) are shown with a solid line. The map includes various streets such as W. Woodbridge Rd, E. Woodbridge Rd, Turner Rd, W. Lockeford St, W. Elm St, W. Pine St, W. Lodi Ave, Tokay St, W. Vine St, Crescent Ave, S. Mills Ave, S. Hutchins St, S. Church St, S. Stockton St, S. Cherokee Ln, S. Ham Ln, S. Century Blvd, W. Century Blvd, W. Marney Ln, W. Armstrong Rd, E. Woodbridge Rd, E. Winery Rd, E. Clarksburg Rd, E. Victor Rd, E. Pine St, E. Lodi Ave, Thurman St, Industrial WY, E. Vine St, Beckman Rd, Beckman Ln, Wells Ln, E. Harney Ln, E. Hogan Ln, and E. Armstrong Rd. The Mokelumne River is shown flowing through the city. The map also includes a legend and a scale bar.

## Potentially Hazardous Operations

### Airports and Airstrips

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoffs and landings. Airport operation hazards include incompatible land uses, power transmission lines, wildlife hazards (e.g. bird strikes), and tall structures (e.g. traffic control towers). (Note that noise impacts are discussed in Chapter 9: Noise.)

Existing public use airports within or adjacent to the Planning Area include:

- Kingdon Airpark: seven miles southwest of downtown Lodi;
- Lodi Airpark: five miles southwest of downtown Lodi, near the intersection of Armstrong and Lower Sacramento roads (inside the Planning Area); and
- Ten private airstrips within or adjacent to the Planning Area.

The 2009 San Joaquin County Airport Land Use Plan provides information on existing and future operations, potential hazards, and land use compatibility. According to the Plan Kingdon Airpark is planning to extend its runway to permit more flights and aircraft types (i.e. from solely accommodating single-engine planes to allowing business jets and turboprop aircraft). No future improvements are anticipated at the Lodi Airpark. Given the distance of these airports from the city's boundaries, the airports do not present substantial hazards to people or property in Lodi.

The Plan's land use compatibility matrix and compatibility zone map is shown in Figure 8-3. The southeast portion of Lodi, south of Century Boulevard, lies within Zone 8: Airport Influence Area, which does not have any land use restrictions. A portion of the Urban Reserve General Plan area, along the north side of Hogan Lane, lies within Zone 7: Traffic Pattern. This classification prohibits outdoor stadiums and non-residential uses with densities greater than 450 persons per acre, and requires at least 10% open space.

### Railroads

Potential hazards associated with railroads include collisions and train derailment. Either of these incidents can lead to human injury or death as well as causing various environmental impacts. The Federal Railroad Administration regulates railroad safety and provides oversight to the use of railroads.

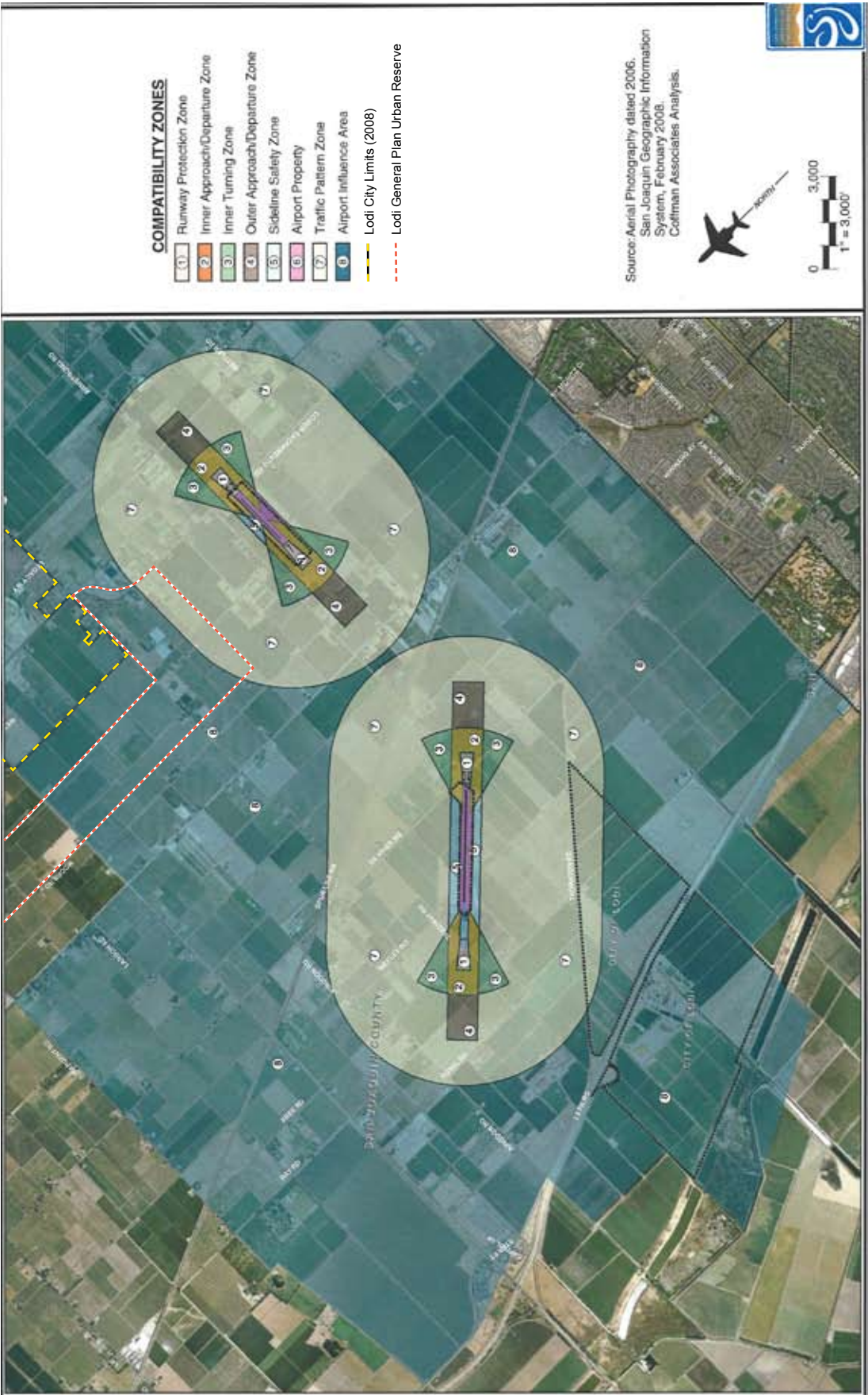
Lodi is served by two national rail lines, Union Pacific Railroad and the Burlington Northern Santa Fe. The city is also served by a local railroad, Central California Traction, which runs contiguous to industrial areas. Daily passenger service via Amtrak is available from Lodi to San Francisco, Los Angeles, Sacramento and points between. A more detailed discussion of railroad operations and infrastructure may be found in Chapter 5: Transportation.

### Utility Corridors

One of the primary causes of disruption to underground natural gas pipelines, which are present in the Planning Area, is external force damage that occurs during excavation activities. Such damage can create pipeline leaks or ruptures and lead to hazardous health and safety conditions. However, a national program is in place to prevent accidental pipeline damage caused by excavation. For areas adjacent to an underground utility pipeline, the U.S. Department of Transportation Office of Pipeline Safety requires that individuals contact the state "One-Call" center prior to beginning excavation. Advanced planning, effective use of these one-call systems, accurate locating and marking of underground facilities, and the use of safe-digging practices can all be effective in reducing underground facility damage and potentially hazardous conditions.



FIGURE 8-3: AIRPORT COMPATIBILITY ZONES





## 8.3 SEISMIC AND GEOLOGIC HAZARDS

In general, geologic and seismic hazards do not pose a substantial risk to development in Lodi or to overall public safety. The Central Valley is filled with a thick sequence of sediments eroded from the Sierra Nevada range to the east. The most recent deposits in the region are floodplain deposits, consisting of clay, silt, and some sand.

### Seismicity

The Planning Area is located 65 miles east of the Bay Area and lies within Seismic Risk Zone 3. Earthquakes in Seismic Risk Zone 3 pose a lesser risk than those experienced in Zone 4 (such as the San Francisco Bay Area). The Planning Area may be affected by regionally occurring earthquakes; however, impacts resulting from such an event are not likely to be severe. Figure 8-4 identifies active and potentially active faults in and around the Planning Area.

### Regional Faults

Lodi's nearest active fault is the Greenville Fault, located approximately 34 miles south of the Planning Area.<sup>2</sup> The Maximum Moment magnitude of the maximum probable earthquake on the Greenville Fault is estimated to be 6.9.<sup>3</sup> Other faults close to the Planning Area exhibiting historic displacement (activity within the last 200 years) are the Concord-Green Valley and Hayward Faults located approximately 45 miles west-northwest and 56 miles west of the Planning Area, respectively. Portions of the Calaveras Fault zone also have been rated as being active within the last 200 years; those portions are located approximately 46 miles southwest of the site. The nearest Quaternary fault (2 million years ago to present) to the Planning Area showing evidence of activity within the past 1.6 million years is the San Joaquin Fault located approximately 24 miles southwest of the Planning Area.<sup>4</sup> The nearest mapped fault trace, the Stockton Fault, is not considered an active fault.

<sup>2</sup> Jennings, 1994.

<sup>3</sup> Peterson et al. 1996.

<sup>4</sup> Jennings 1994; Bartow 1991.

### Seismic Structural Safety

The greatest geologic hazard in Lodi is the structural danger posed by groundshaking from earthquakes originating outside of the area. During a high intensity event, some damage could occur to well-made structures and chimneys; some towers could fall; and poorly constructed or weak structures could be heavily damaged. The susceptibility of a structure to damage from ground shaking is related to the underlying foundation material. A foundation of rock or very firm material can intensify short-period motions, which affect low-rise buildings more than tall, flexible ones. A deep layer of saturated alluvium can cushion low-rise buildings, but it can also accentuate the motion in tall buildings. Other potentially dangerous conditions include, but are not limited to: building architectural features that are not firmly anchored, such as parapets and cornices; roadways, including column and pile bents and abutments for bridges and overcrossings; and above-ground storage tanks and their mounting devices.

The risk of surface fault rupture is considered low. The probability of soil liquefaction actually taking place in the Planning Area is considered to be a low to moderate hazard, due to the substantial distance from the active Hayward and Calaveras Fault zones and the type of ground shaking expected from those faults.

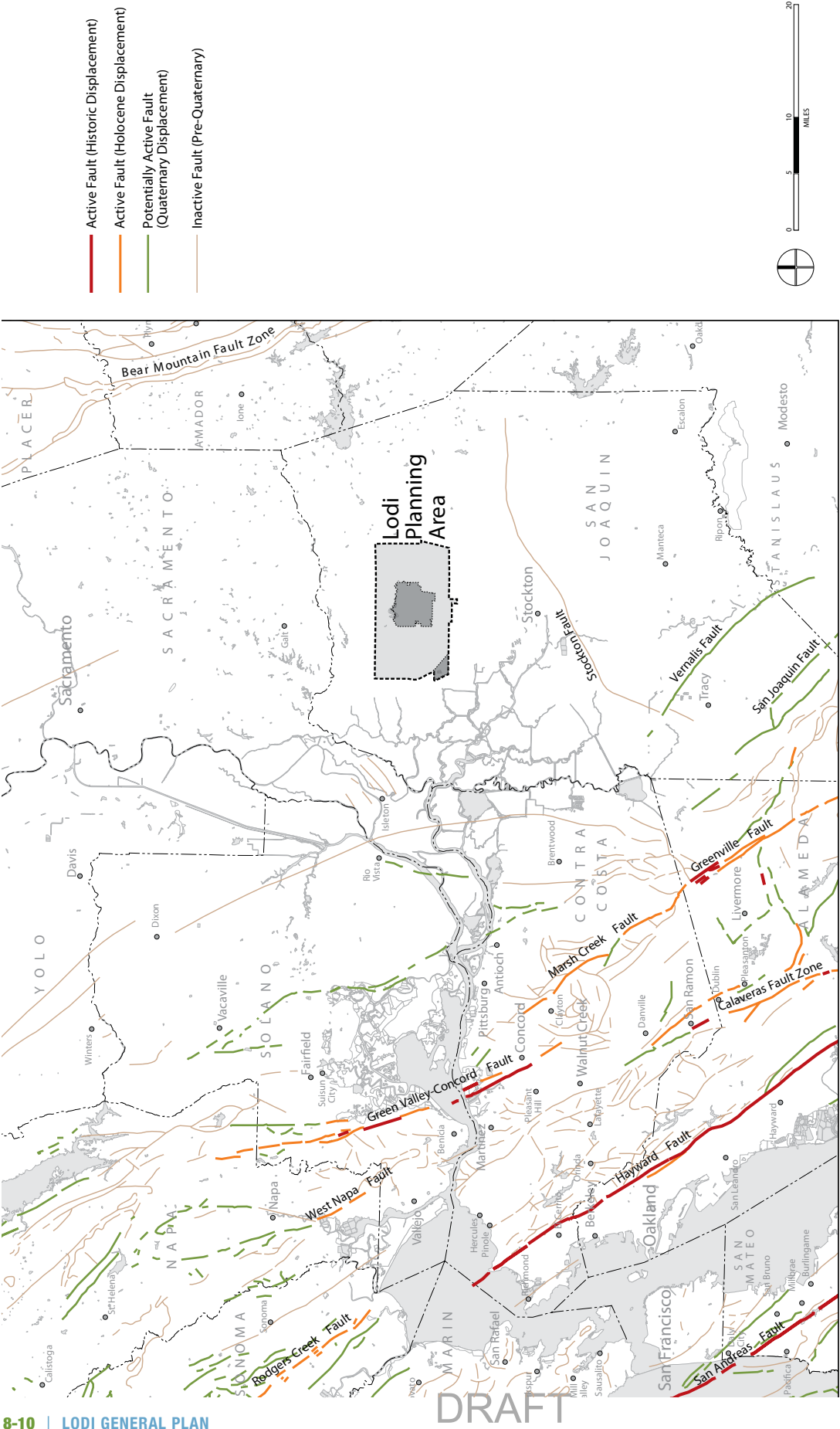
### Other Geologic Hazards

Additional geologic hazards that may exist within the Planning Area include soil erosion and settlement. The Planning Area is primarily flat and thus the risk of unstable soils or landslides is considered relatively low.

### Soil Erosion

Soil erosion is the process whereby soil materials are worn away and transported to another area either by wind or water. Rates of erosion can vary depending on the soil material and structure, placement, and the general level of human activity. Soil containing high amounts of sand or silt can be easily eroded while clayey soils are less susceptible. The Tokay soils present in the Planning Area have a moderate potential for wind erosion. The

FIGURE 8-4: REGIONAL FAULTS



Tujunga soils, found in more limited quantities in the Planning Area, have a severe potential for wind erosion if vegetative covering is removed.

### **Expansive Soils**

Expansive soils are largely comprised of clay, which expand in volume when water is absorbed and shrink when dried. Structural damage may result over a long period of time, usually resulting from inadequate soil and foundation engineering or the placement of structures directly on expansive soils. Several of the soil types located within the Planning Area are comprised of potentially expansive materials. However, the majority of the Planning Area either has not been measured for soil shrink-swell or has a low potential for soil shrink-swell.

### **Settlement**

Settlement is the consolidation of the underlying soil when a load, such as that of a building or new fill material, is placed upon it. When soil tends to settle at different rates and by varying amounts depending on the load weight, it is referred to as differential settlement. Settlement commonly occurs as a result of building construction or other large projects that require soil stockpiles. Areas of the Planning Area that contain fill material may be susceptible to settlement. If the fill materials are unconsolidated they have the potential to respond more adversely to additional load weights as compared to adjacent native soils.

## **8.4 FIRE HAZARDS**

Both urban and wildland fire hazards exist in the Lodi Planning Area, creating the potential for injury, loss of life, and property damage. In the event of a fire, the Fire Department relies on sufficient water supply and pressure. The City's design standard for water transmission facilities is to provide 4,000 gallons per minute of flow at a minimum 45 pounds per square inch of pressure in pipes 8 inches and larger.

### **Urban Fire Hazards**

Urban fires primarily involve the uncontrolled burning of residential, commercial, and/or industrial structures due to human activities. Factors that exacerbate urban structural fires include substandard building construction, highly flammable materials, delayed response times, and inadequate fire protection services.

### **Wildland Fire Hazards**

The Planning Area is not characterized by significant areas of wildlands. As noted in Chapter 7: Conservation, less than one percent of the city's land area is identified as Native Riparian and four percent is identified as Native Vegetation. Additionally, the topography of the area is relatively homogenous; steep slopes that could contribute to wildland fires are not common. Data provided by the California Department of Conservation Fire and Resource Assessment Program indicates that the few areas within the Planning Area that are listed as "High" fire threat are in areas containing brush as the groundcover.

## 8.5 EMERGENCY MANAGEMENT

### Public Safety Departments

The Lodi Police and Fire departments manage public safety in Lodi, with the Fire Department leading emergency preparedness and planning.

The Fire Department provides a wide range of emergency and non-emergency services, including fire suppression, emergency medical services, hazardous materials response, technical rescue, fire prevention, public education, and related safety services. The Emergency Operations Center, located at the Police department building, serves as the center of the city's emergency operations. City operations remain in compliance with the National Incident Management System, a comprehensive national approach to incident management, applicable to federal, state, and local governments and the Standardized Emergency Management System, which provides a strategy and framework to address multi-agency and multi-jurisdictional emergencies in California.

As of 2008, the Fire Department had 59 personnel, including 51 firefighters, company officers, or battalion chiefs. The city of Lodi has an Insurance Services Office (ISO) rating of Class 3. A Class 3 ISO rating indicates that the Fire Department is strategically placed throughout the City, and has adequate personnel, equipment, and expertise to serve the current population. In 2006, the most recent year of data availability, the department met the self-imposed National Fire Protection Association's response time criteria of 6 minutes for 90% of all calls.

The Police Department's basic responsibility is to protect and serve the public and property within Lodi, through crime prevention, investigation, and other services. As of 2008, the Police Department had 118 full-time employees and 120 volunteers, with 78 sworn officers.

### Emergency Planning

The City has adopted the San Joaquin County Hazard Mitigation Plan. This plan identifies measures to reduce the impacts of natural and manmade hazards and to

facilitate the recovery and repair of structures if damage should occur from hazardous events. Adoption of the plan ensures that Lodi is eligible for certain federal and State funds for disaster recovery in case of such an event.

### Evacuation Routes and Safety Standards

The City provides street standards for all street types, thus ensuring appropriate standards for emergency access and evacuation. For example, the standards specify roadway widths of 30 feet (curb-to-curb) for minor residential streets and 52 feet for major collector streets.



## 8.6 POLICIES

### GUIDING POLICIES

- S-G1** Ensure a high level of public health and safety.
- S-G2** Prevent loss of lives, injury, illness, and property damage due to flooding, hazardous materials, seismic and geological hazards, and fire.
- S-G3** Protect the public from disasters and provide guidance and response in the event a disaster or emergency.
- S-G4** Minimize vulnerability of infrastructure and water supply and distribution systems.

### IMPLEMENTING POLICIES

#### Flooding and Drainage

- S-P1** Continue to participate in the National Flood Insurance Program and ensure that local regulations are in full compliance with standards adopted by FEMA.
- S-P2** Cooperate with appropriate local, State, and federal agencies to address local and regional flood issues and dam failure hazards.
- S-P3** Require adequate natural floodway design to assure flood control in areas where stream channels have been modified and to foster stream enhancement, improved water quality, recreational opportunities, and groundwater recharge.
- S-P4** Prohibit new development, except for public uses incidental to open space development, within Zone A (100-year flood zone), as shown on Figure 8-1.
- S-P5** Site critical emergency response facilities—such as hospitals, fire stations, police offices, substations, emergency operations centers and other emergency service facilities and utilities—to minimize exposure to flooding and other hazards.

#### S-P6

Update Zoning Ordinance and development review process as needed to reduce peak-hour stormwater flow and increase groundwater recharge. These may include provisions for:

- Constructing parking areas and parking islands without curbs and gutters, to allow stormwater sheet flow into vegetated areas.
- Grading that lengthens flow paths and increases runoff travel time to reduce the peak flow rate.
- Installing cisterns or sub-surface retention facilities to capture rainwater for use in irrigation and non-potable uses.

#### S-P7

Update City street design standards to allow for expanded stormwater management techniques. These may include:

- Canopy trees to absorb rainwater and slow water flow.
- Directing runoff into or across vegetated areas to help filter runoff and encourage groundwater recharge.
- Disconnecting impervious areas from the storm drain network and maintain natural drainage divides to keep flow paths dispersed.
- Providing naturally vegetated areas in close proximity to parking areas, buildings, and other impervious expanses to slow runoff, filter out pollutants, and facilitate infiltration.
- Directing stormwater into vegetated areas or into water collection devices.
- Using devices such as bioretention cells, vegetated swales, infiltration trenches and dry wells to increase storage volume and facilitate infiltration.
- Diverting water away from storm drains using correctional drainage techniques.

#### Hazardous Materials and Operations

#### S-P8

Require that all fuel and chemical storage tanks are appropriately constructed; include spill containment areas to prevent seismic damage, leakage, fire and explosion; and are structurally or spatially separated from sensitive land uses, such as residential neighborhoods, schools, hospitals and places of public assembly.

**S-P9** Ensure compatibility between hazardous material users and surrounding land use through the development review process. Separate hazardous waste facilities from incompatible uses including, but not limited to, schools, daycares, hospitals, public gathering areas, and high-density residential housing through development standards and the review process.

**S-P10** Consider the potential for the production, use, storage, and transport of hazardous materials in approving new development. Provide for reasonable controls on such hazardous materials. Ensure that the proponents of applicable new development projects address hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies, as necessary, for each identified site as part of the design phase for each project. Require projects to implement federal or State cleanup standards outlined in the studies during construction.

**S-P11** Regulate the production, use, storage, and transport of hazardous materials to protect the health of Lodi residents. Cooperate with the County and Lodi Fire Department in the identification of hazardous material users, development of an inspection process, and implementation of the City's Hazardous Waste Management and Hazardous Materials Area plans. Require, as appropriate, a hazardous materials inventory for project sites, including an assessment of materials and operations for any development applications, as a component of the development environmental review process or business license review/building permit review.

**S-P12** Work with waste disposal service provider(s) to educate the public as to the types of household hazardous wastes and the proper methods of disposal and shall continue to provide opportunities for residents to conveniently dispose of household hazardous waste.

**S-P13** Continue to follow the County Comprehensive Airport Land Use Plan for guidelines on land use compatibility near airports, land use restrictions, and to ensure public safety.

**S-P14** Support grade-separated railroad crossings, where feasible, and other appropriate measures adjacent to railroad tracks to ensure the safety of the community.

**S-P15** Continue to mark underground utilities and abide by federal safe-digging practices during construction.

### Seismic and Geologic Hazards

**S-P16** Ensure that all public facilities, such as buildings, water tanks, underground utilities, and berms, are structurally sound and able to withstand seismic activity.

**S-P17** For buildings identified as seismically unsafe, prohibit a change in use to a higher occupancy or more intensive use until an engineering evaluation of the structure has been conducted and structural deficiencies corrected consistent with City building codes.

**S-P18** Require soils reports for new projects and use the information to determine appropriate permitting requirements, if deemed necessary.

**S-P19** Require that geotechnical investigations be prepared for all proposed critical structures (such as police stations, fire stations, emergency equipment, storage buildings, water towers, wastewater lift stations, electrical substations, fuel storage facilities, large public assembly buildings, designated emergency shelters, and buildings three or more stories high) before construction or approval of building permits, if deemed necessary. The investigation shall include estimation of the maximum credible earthquake, maximum ground acceleration, duration, and the potential for ground failure because of liquefaction or differential settling.

- S-P20** Require new development to include grading and erosion control plans prepared by a qualified engineer or land surveyor.

## **Fire Hazards**

- S-P21** Maintain a vegetation management program to ensure clearing of dry brush areas. Conduct management activities in a manner consistent with all applicable environmental regulations.

## **Emergency Management**

*Policies related to police and fire facilities are addressed in Chapter 3: Growth Management and Infrastructure.*

- S-P22** Coordinate with local, State, and Federal agencies to establish, maintain, and test a coordinated emergency response system that addresses a variety of hazardous and threatening situations. Conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures. Develop and implement public information programs concerning disaster response and emergency preparedness and develop mutual aid agreements and communication links with surrounding communities for assistance during times of emergency.
- S-P23** Maintain and periodically update the City's Emergency Preparedness Plan, including review of County and State emergency response procedures that must be coordinated with City procedures.
- S-P24** Ensure that major access and evacuation corridors are available and unobstructed in case of major emergency or disaster. Continue to identify appropriate road standards, including minimum road widths and turnouts to provide adequate emergency access and evacuation routes.
- S-P25** Continue to use the San Joaquin County Hazard Mitigation Plan to reduce hazard risk and coordinate with the County on its update and implementation, consistent with the Federal Emergency Management Agency and the Disaster Act of 2000.

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